



NJ Department of Environmental Protection
Water Monitoring and Standards
Bureau of Marine Water Monitoring

COOPERATIVE COASTAL MONITORING PROGRAM Summary Report for 2013



June 2014

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New Jersey Department of Environmental Protection

Water Resources Management

Division of Water Monitoring and Standards

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Cooperative Coastal Monitoring Program

Bureau of Marine Water Monitoring

Cover Photo – New Jersey Coastline (photo by Steve Jacobus, NJDEP)

Introduction

The Cooperative Coastal Monitoring Program (CCMP) is coordinated by the New Jersey Department of Environmental Protection's Bureau of Marine Water Monitoring. The CCMP assesses coastal water quality and investigates sources of water pollution. The information collected under the CCMP assists the DEP in responding to immediate public health concerns arising from contamination in coastal recreational bathing areas. Agencies that participate in the CCMP perform sanitary surveys of beach areas and monitor concentrations of bacteria in nearshore ocean and estuarine waters to assess the acceptability of these waters for recreational bathing. These activities and the resulting data are used to respond to immediate public health concerns associated with recreational water quality and to eliminate the sources of fecal contamination that impact coastal waters. Funding for the CCMP comes from the NJ Coastal Protection Trust Fund and the United States Environmental Protection Agency (EPA) Beaches Environmental Assessment and Coastal Health (BEACH) Act grants. BEACH Development and Implementation grants were awarded in the years 2001 through 2013. DEP designs the beach sampling and administers the communication, notification and response portion of the CCMP. A portion of the BEACH grant funds are passed through to the four county health departments participating in the CCMP who perform the weekly sample collection and analysis. The participating agencies are:

Atlantic County Health Department
Cape May County Health Department
Monmouth County Health Department
Ocean County Health Department

Additional assistance is provided by the following agencies:

Atlantic City Health Department
Long Beach Island Health Department
Long Branch Health Department
Middletown Health Department
Monmouth County Regional Health Commission
New Jersey Department of Health

As part of this program, DEP routinely inspects the 17 wastewater treatment facilities that discharge to the ocean (Appendix 1). DEP also performs aerial surveillance of New Jersey nearshore coastal waters and the Hudson-Raritan estuaries six days a week (May to September) to observe changing coastal water quality conditions and potential pollution sources.

CCMP Procedures

Chapter IX of the State Sanitary Code N.J.A.C. 8:26 and the DEP *Field Sampling Procedures Manual* prescribe the sampling techniques and beach opening and closing procedures the agencies use for the CCMP. The agencies perform routine sampling from mid-May through mid-September on Mondays. Samples are analyzed for enterococci concentrations using DEP-certified laboratories for EPA approved methods; analyses provide results within 24 hours of sampling. Counties submit water monitoring data to DEP in electronic format after each sampling event through the use of DEP's web-based Beach Monitoring System. In 2008, DEP began transferring monitoring and beach closing notification data to EPA via the WQX data system.

The CCMP included water quality monitoring at 181 ocean and 34 bay stations in 2013. Station locations coincided with recreational swimming beaches. Recreational stations are sampled to assess trends and to protect recreational bathers from elevated levels of bacteria. Most ocean beach monitoring stations are selected because of their proximity to other similar recreational beaches and the lack of specific pollution sources. The sample results from these beaches are intended to evaluate the water quality at several lifeguarded beaches in an area rather than just one lifeguarded beach. Other ocean beaches are assigned monitoring stations when

effects from potential pollution sources are possible. A monitoring station is assigned at each recreational bay beach because of their noncontiguous locations.

Recreational beaches, both ocean and bay, are subject to opening and closing procedures of the State Sanitary Code and therefore, must be resampled when during routine sampling, bacteria concentrations exceed the primary contact standard. In the years prior to 2004, the primary contact standard was 200 fecal coliforms per 100 mL of sample. Studies performed by EPA determined that enterococci bacteria have a greater correlation with swimming-associated gastrointestinal illness in marine waters than fecal coliform bacteria. In 2004, the State Sanitary Code was amended to require monitoring for enterococci bacteria with a new primary contact standard of 104 colony forming units per 100 mL of sample. Consecutive samples that exceed the standard require the closing of the beach until a sample is obtained that is within the standard. When high bacteria concentrations are recorded at an ocean station, the sampling is extended linearly along the beach to determine the extent of the problem and the pollution source. This “bracket sampling” can result in an extension of the beach closing to contiguous lifeguarded beaches. Sampling is always performed in conjunction with a sanitary survey, which includes identifying possible pollution sources and observing water and shoreline conditions.

Health or enforcement agencies may close beaches at any time at their discretion to protect the public’s health and safety. Swimming advisories may be issued at any beach with initial sample results exceeding the standard. In 2013, only Monmouth and Ocean Counties issued swimming advisories at public beaches.

2013 Beach Actions

The participating health agencies closed 80 ocean and 8 bay beaches in the 2013 summer season, a 46% decrease in beach closings over the previous year. All of the ocean beach closings in 2013 were precautionary; the majority of the precautionary ocean closings were associated with the rainfall policy at the four ocean beaches surrounding the Wreck Pond outfall in Monmouth County. Four closings were due to a suspected sewage spill in Cape May County. Subsequent sampling later showed that no sewage reached the bathing beaches and water quality was not affected.

Beaches may be closed when bacteria levels exceed the standard or as a precautionary measure in response to an environmental condition, i.e., a heavy rain event or floatables washup. Health agencies may also issue advisories to the public on an initial exceedance of the bacterial standard. Of the four coastal counties participating in the CCMP, only Monmouth and Ocean Counties issue bathing advisories at beaches when initial sample results exceed the water quality standard. Beach conditions, advisories and beach closings, and the reasons for beach closings were posted on the DEP web page (www.njbeaches.org) and on the DEP Sandline (800-648-SAND) each day. Additionally, when beach closings were necessary, the county or local health agency posted “No Swimming” signs at the beach. Signs remained posted until the swimming ban was lifted. Detailed beach closing and advisory information for 2013, including the specific beaches closed and reasons for the closings for this period are presented in Appendix 2. Table 1 below presents the numbers of closings and advisories from 2004 through 2013.

Table 1: Numbers of Ocean and Bay Beach Actions

Ocean	<u>2004</u> ¹	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u> ²	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
closed for bacteria	17	7	18	0	1	6	0	3	3	0
precautionary closing	42	50	79	85	45	111	64	84	67	80
# Rainfall Provisional Beaches	2	3	3	4	4	4	4	4	4	4
closed for floatables	0	0	0	4	120 ²	0	0	0	103 ⁴	0
advisories ³	n/a	n/a	n/a	n/a	n/a	7	17	15	10	3
Total ocean beach actions	59	57	97	89	158	117	81	102	183	83
Bay	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
closings for bacteria	89	4	27	35	30	32	7	8	13	8
precautionary closing	20	18	10	18	13	24	20	21	4	0
# Rainfall Provisional Beaches	1	1	1	1	2	2	2	2	2	2
closed for floatables	0	0	0	0	0	0	0	0	0	0
Advisories ³	n/a	n/a	n/a	n/a	n/a	0	1	3	48	15
Total bay beach actions	109	22	37	53	43	56	27	30	65	23

Note: Precautionary rainfall-related beach closing policy implemented for two Spring Lake beaches in 2002. Two additional ocean and two bay beaches added to policy in subsequent years.

1 Indicator changed from fecal coliform to enterococci in 2004

2 A criminal medical waste dumping event was responsible for 120 ocean beach closings

3 Monmouth County health agencies added swimming advisory policies late in the 2009 bathing season. In 2012, Ocean County also began issuing bathing advisories.

4 An unusually heavy rain event in the New York Harbor area the previous week caused combined sewers in New York and northern New Jersey to overflow into shared waters. Trash and debris from this event is the probable cause of the washup on Long Beach Island.

Closings include those required for consecutive high fecal coliform or enterococci concentrations and by health agency discretion due to public health concerns. The vast majority of the closings listed above are precautionary due to concerns of nonpoint pollution transported by stormwater during a rain event. Beach closings due to wash ups of floatable debris have been fairly uncommon. In 1990, floatable debris was responsible for a total of 10 separate beach closings. In the following 12 years, no closings were due to floatables; however, in 2003, 13 separate closings and in 2007 four closings were due to reported wash ups of trash and debris. In 2008, a criminal medical waste dumping event was responsible for 120 ocean beach closings. In 2012 approximately 50 syringes along with other floatable debris washed onto beaches on Long Beach Island closing 12 miles of beaches for one day. Bay beaches are rarely affected by washups of floatable debris.

In 2002, the Monmouth County Health Department implemented a precautionary rainfall beach closing procedure which is in effect at beaches with known and identified sources of potential contamination. Precautionary beach closings after significant rainfall at these locations are more protective of public health since there is no need to wait for laboratory results from water quality sampling. The bathing public is

protected from exposure to potentially contaminated stormwater by this approach. Since 2002, a total of four ocean beaches and two bay beaches in Monmouth County have been identified as rain provisional beaches, which accounts for the increase in beach closing numbers at ocean and bay beaches.

The CCMP does not record closings related to rough seas, beach maintenance projects, shark sightings, and fish and clam wash ups. The CCMP also does not include those closings that are briefly in effect during the assessment of water conditions by local officials. Only those beach closings ordered by local health officials are included.

As mentioned above, in 2002, a precautionary beach closing plan was implemented in Spring Lake Borough, Monmouth County. It required that the two beaches north of the Wreck Pond outfall, Brown Avenue and York Avenue, close for a specified time period following a rain event. The bathing areas of these two beaches are automatically closed for 24 hours after the end of all rainfalls greater than 0.1 inch or that cause an increased flow in storm drains; and for 48 hours from the end of all rainfalls greater than 2.8 inches within a 24 hour period. In addition, lifeguards (or staff as designated by Spring Lake Borough) will prohibit swimming near any parts of these beaches where the stormwater plume is observed to be mixing within the swimming area. In 2005, the Terrace beach and in 2007, Beacon Boulevard beach, both beaches in Sea Girt just south of the Wreck Pond outfall, were added to the precautionary beach closing plan.

Intensive source trackdown has identified that sources of pollution to Wreck Pond include stormwater discharges directly to the pond and suspected failing infrastructure in the community surrounding the pond. These factors contribute to the elevated levels of enterococcus bacteria discharged to the ocean during rain events. The Department is moving ahead with steps to alleviate these sources of contamination. In 2006, DEP completed a 300-foot extension to the Wreck Pond ocean discharge outfall pipe in order to carry contaminated stormwater further out into the ocean and reduce the impact to bathing beaches. The total numbers of beach closings related to bacteria (Figure 1) have been lower since the outfall extension, but the total number of beach closings at the four “rain provisional” beaches varies (Figure 2). These rain closing numbers are dependent on the amount of rainfall in any given summer season. DEP reinstated the wet-weather monitoring at the four Wreck Pond beaches during the 2012 beach season and continued sampling in the off season and during the 2013 beach season. DEP, Spring Lake, Sea Girt, Monmouth County Health Department, Monmouth County Regional Health Commission and Clean Ocean Action have reevaluated the provisional rainfall closure policy at Wreck Pond. DEP reinstated wet weather monitoring at the four Wreck Pond beaches by reviewing and analyzing all wet and dry monitoring results at the four Wreck Pond beaches. It has been determined that the data does not support the rainfall closure policy. The precautionary rainfall policy at the four Wreck Pond beaches has accounted for 591 beach closings since 2006. Since 2006, there has been only one beach closing due to an exceedance of the bacteria standard, which was at Beacon Blvd. beach in 2009.

Bacteria Related Closings at Wreck Pond Beaches

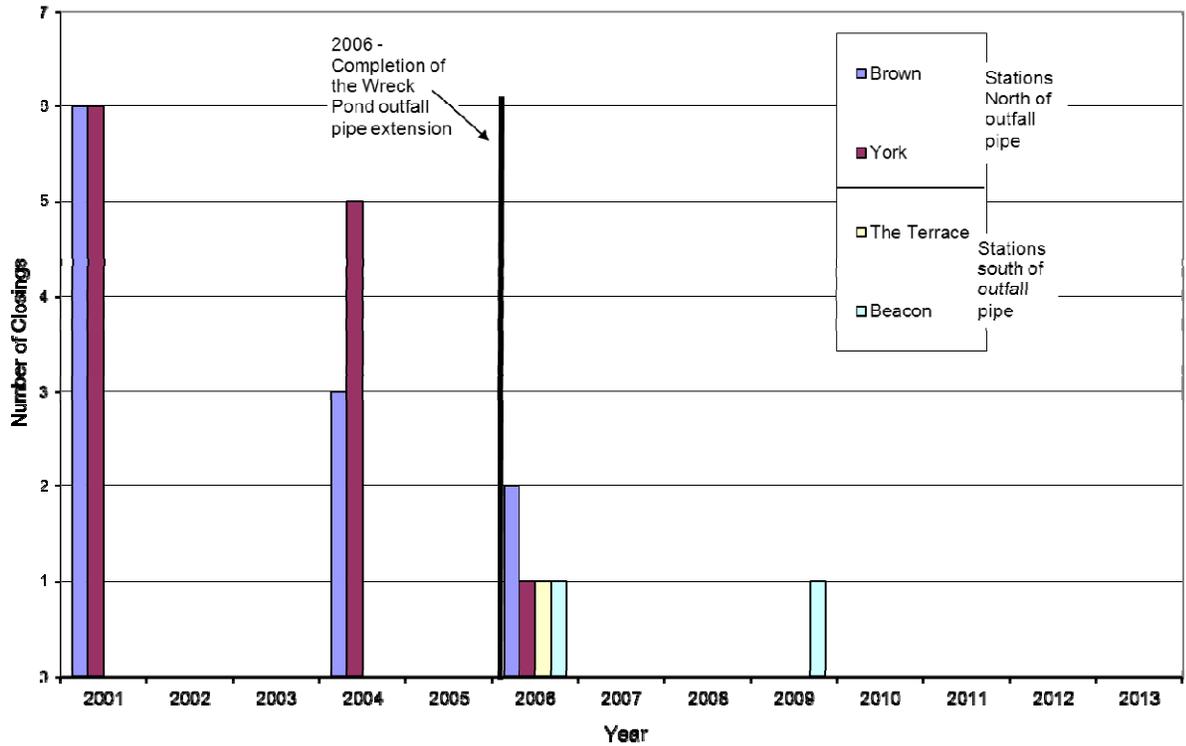


Figure 1. Beach closings caused by bacteria exceeding the standard at the four beaches surrounding the Wreck Pond outfall in the years 2001 - 2013.

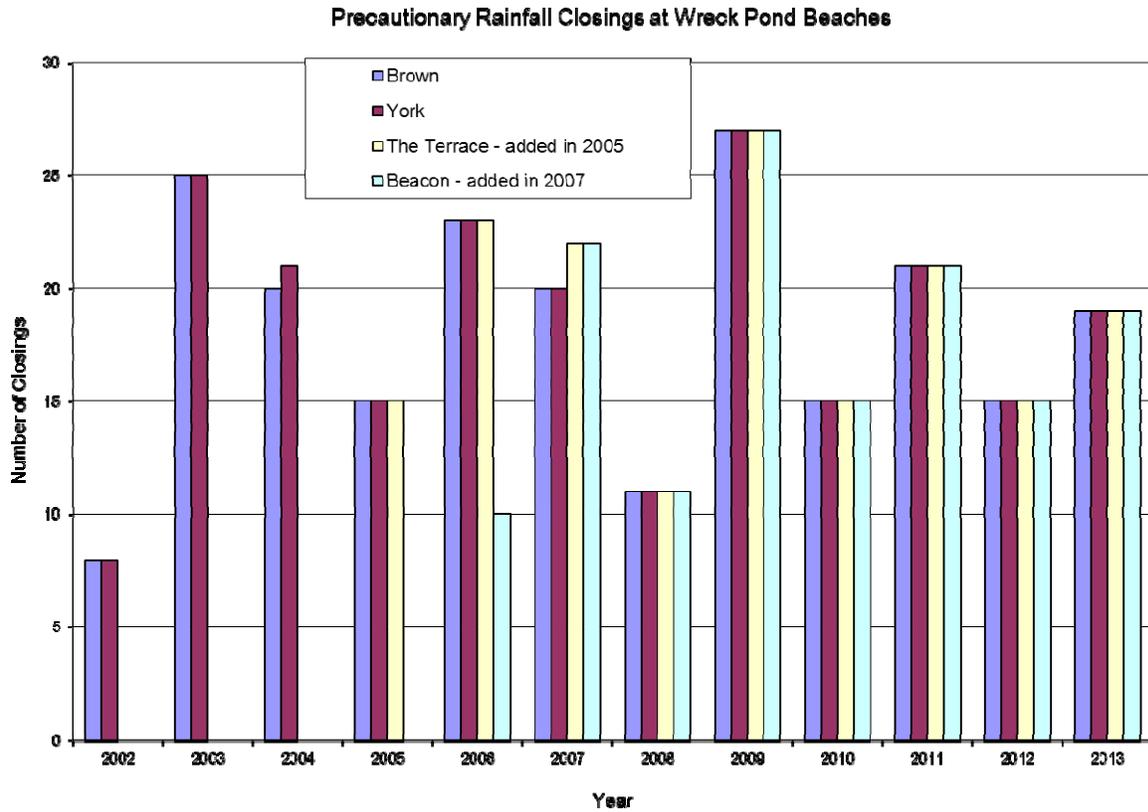


Figure 2. Beach closings at the four "rain provisional" beaches surrounding the Wreck Pond outfall in the years 2002 - 2013. The rainfall closing policy went into effect in 2002. Beacon Beach had rain provisional closings in 2006 but was not officially added to the policy until 2007.

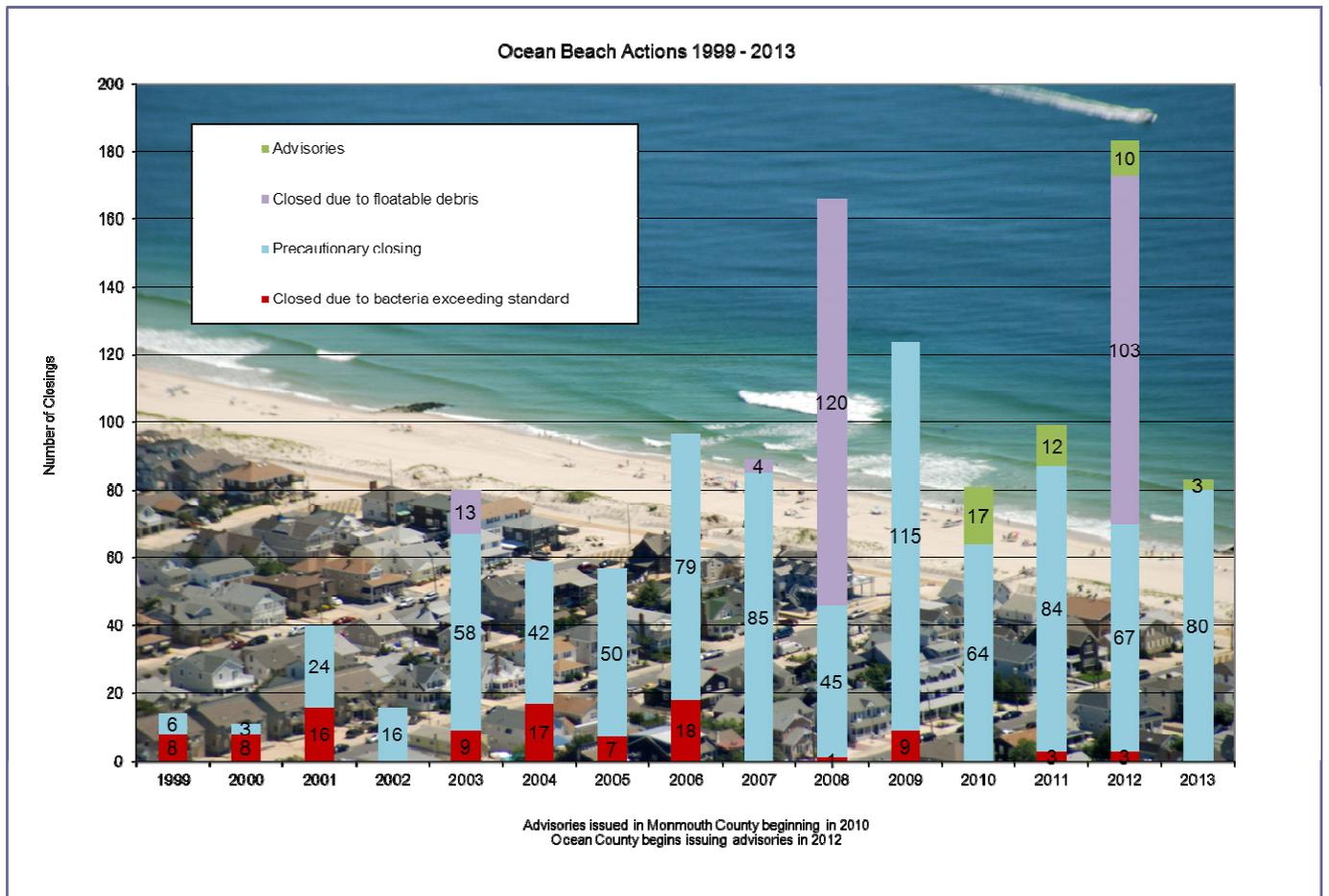


Figure 3. 15-Year Trend in NJ ocean beach actions.

As shown in Figure 3 and Figure 5, closures at New Jersey's ocean and bay beaches due to exceedances of the water quality standard are low. Figure 4 and Figure 6 show the 2012 ocean and bay closings and the reasons for closure. However, the overall number of closures is up at ocean beaches primarily due to precautionary closures since 2000, the criminal medical waste dumping event in 2008 and the one-day floatable washup in 2012. These precautionary closures represent an enhanced level of public health protection that has been implemented by county and local health officials with the support of DEP. Even with these additional precautionary closures, New Jersey beaches were open to bathing over 99.8% of the time in 2013 (Figure 7). The national average was 95% in 2012¹, the most recent year for which data is available. With more than 650 ocean and bay beaches (Figure 9), New Jersey has more recreational beaches than any other state on the east coast.

¹ United States Environmental Protection Agency, EPA's Beach Report 2012 Swimming Season June 2013, EPA 820-F-13—014, http://water.epa.gov/type/oceb/beaches/upload/national_facsheet_2012.pdf

2013 Ocean Beach Actions

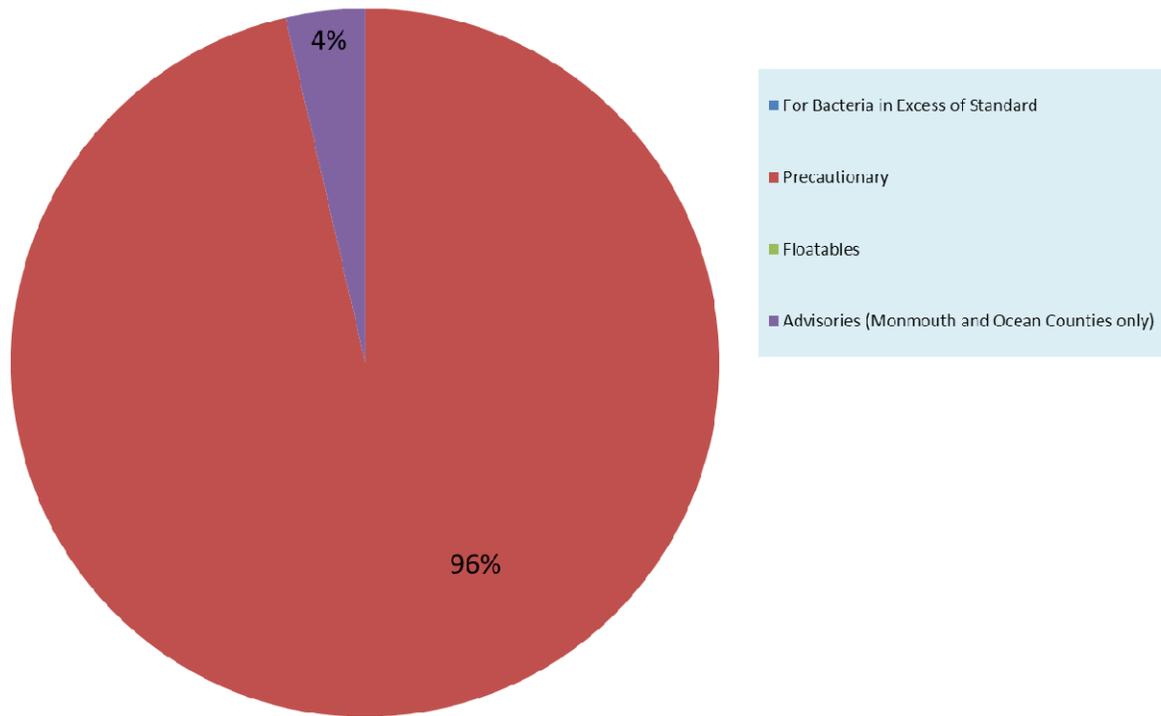


Figure 4. 2013 Ocean beach actions: percentage of total and reason for action.

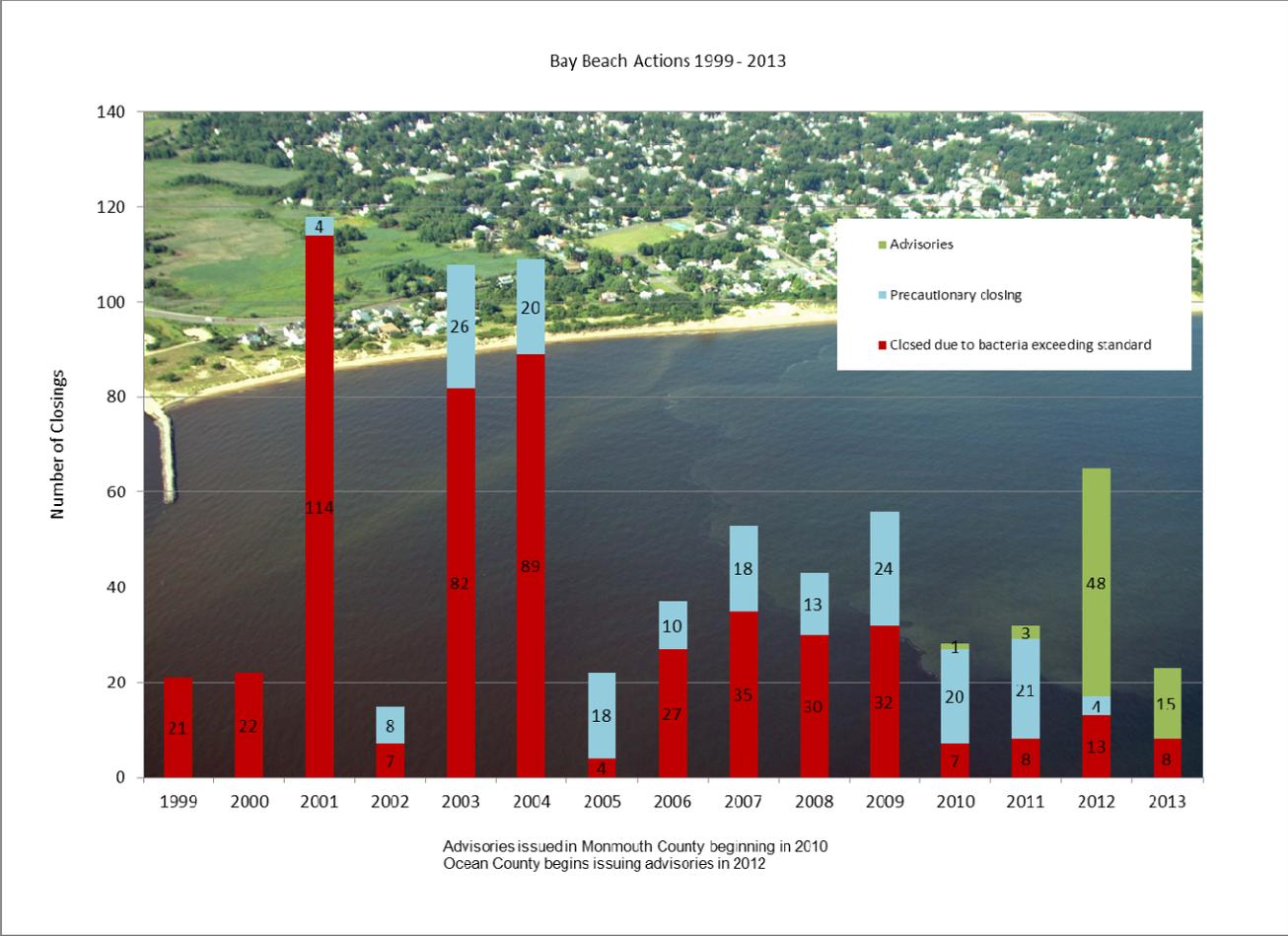


Figure 5. 15-Year Trend in NJ bay beach actions.

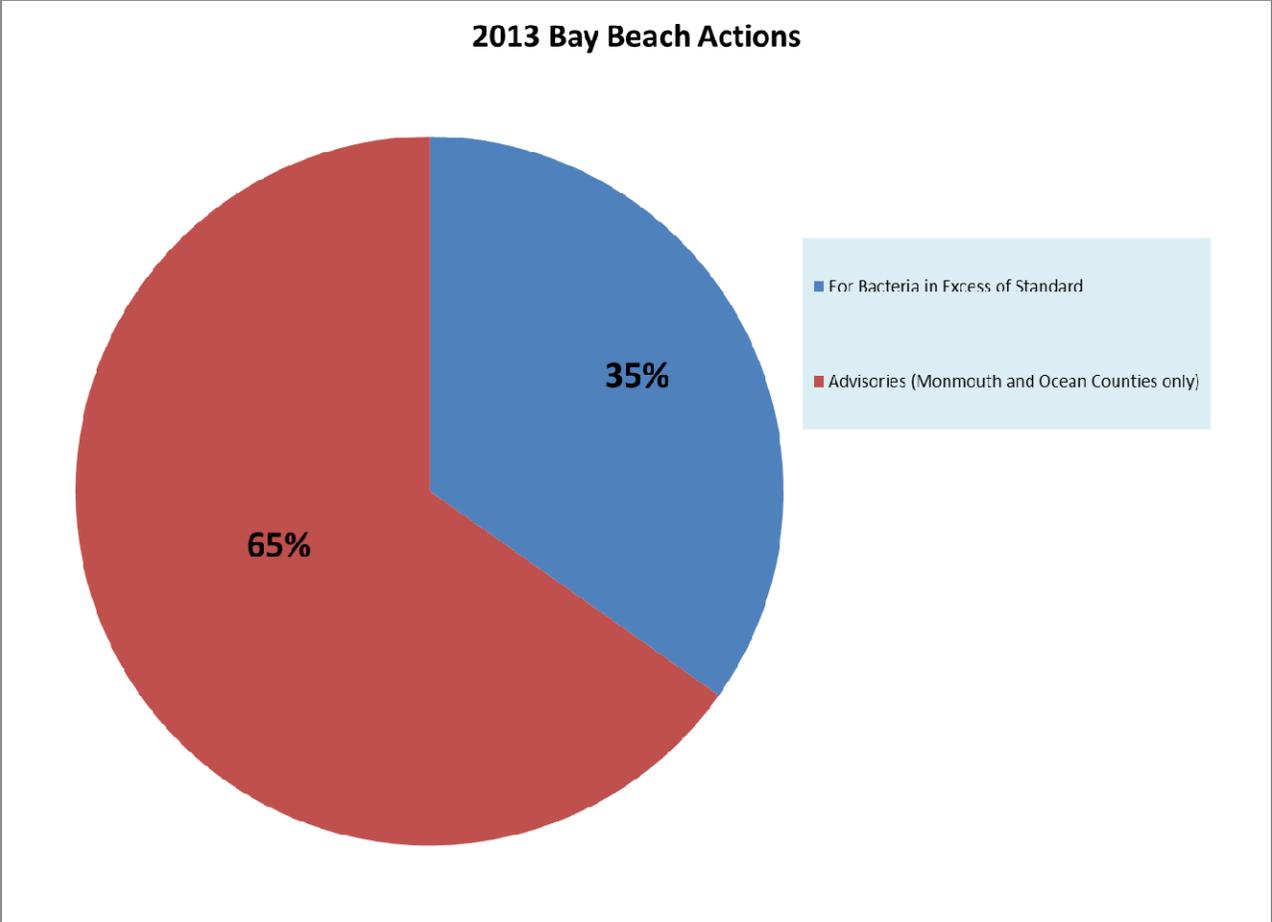


Figure 6. 2013 Bay beach actions: percentage of total and reason for action.

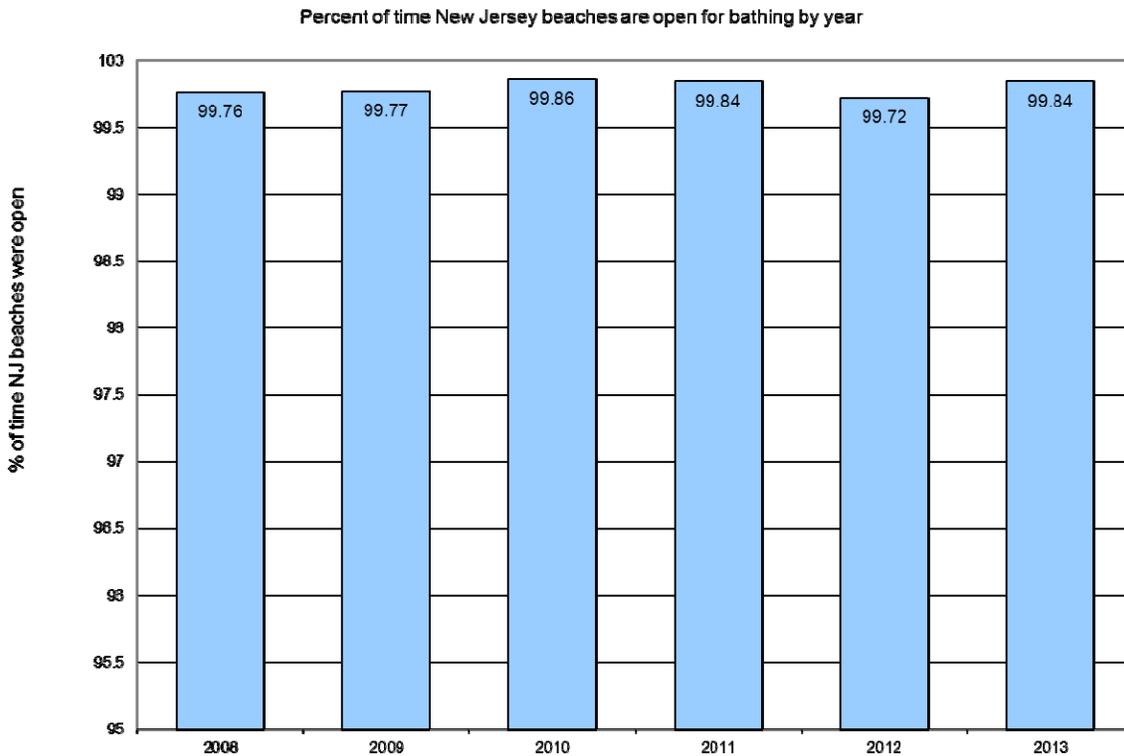


Figure 7. Percent of time NJ ocean and bay beaches are open for bathing by year

Enhancements to CCMP

DEP has joined with the EPA and others in the private and public sectors to identify and address sources of pollution impacting the State's beaches. This approach will accelerate improvements in the quality of our beaches and coastal waters as a result of the increased coordination and leveraging of resources.

Wreck Pond

Beaches surrounding the Wreck Pond outfall have experienced significant numbers of precautionary beach closings due to potential contamination from the pond reaching bathing beaches (Figure 2). NJDEP has been working with local stakeholders to look at sources of contamination to the pond, flooding around the pond, and options for addressing these problems. In 2012, the Wreck Pond Restoration Action Plan was developed to focus efforts to remediate sources of bacteria and reduce flooding. A website has been developed incorporating all research studies, reports and information about ongoing efforts around Wreck Pond including an interactive map that displays all analytical data. For more information about Wreck Pond and the progress of the restoration, go to: <http://www.nj.gov/dep/wreckpond/>. Some of the projects in the watershed include:

- In 2013, Spring Lake Borough received an EPA Grant to conduct assessment of the storm and sanitary infrastructure that drain to Wreck Pond from the Boroughs of Spring Lake and Sea Girt. This assessment was completed in the summer of 2013 and included televising and cleaning the lines,

GIS/GPSing of the systems, temporary repairs, and prioritization of repairs and improvements. The assessment found compromised sanitary sewer laterals from 3 homes that were draining to the stormwater sewer system. The sanitary lines were immediately repaired with a temporary modification to remove sanitary waste from the stormwater system and the project was placed on the priority list for long-term repair. Additionally, DEP has made \$500,000 of Clean Water State Revolving Fund principle forgiveness loans through New Jersey Environmental Infrastructure Trust to complete improvements to the infrastructure systems in the Wreck Pond watershed.

- DEP's Bureau of Marine Water Monitoring conducted a continuous 48-hour storm study and captured data for an entire storm event.
- DEP conducted a third round of monitoring of the Stormwater Manufactured Treatment devices that were installed by Monmouth County in 2009-2010. The installation of the Stormwater Manufactured Treatment devices was funded by Corporate Business Tax and 1985 Wastewater Treatment grants. Data collected from water quality samples collected during wet-weather events and routine beach season monitoring was reviewed and analyzed. It was determined that water quality at the four beaches surrounding the outfall is within the bathing standard and it is no longer necessary to continue the rainfall closure policy, as shown by the lack of recent bacteria-related closings in Figure 1. The Monmouth County Regional Health Commission (with input from the DEP, Monmouth County Health Department, Spring Lake, Sea Girt and Clean Ocean Action) will remove the precautionary rainfall closure policy starting with the 2014 beach season. In lieu of automatically closing beaches following rain events, DEP and/or Monmouth County Health Department will be conducting wet weather monitoring at the four beaches surrounding the Wreck Pond outfall during the 2014 beach season.
- Hurricane Sandy federal funds were appropriated for the US Army Corps of Engineers (Corps) to fund the Wreck Pond Feasibility Ecological Restoration and Flood Reduction Study to increase natural tidal flow to the pond. Increasing the tidal exchange from Wreck Pond with the Atlantic Ocean is expected to flush the pond more quickly, relieve flooding of the surrounding communities and improve water quality. The study will also evaluate how minimal dredging of channels will allow the pond to naturally dredge itself through increased tidal mixing. DEP executed the agreement with the Corps in September 2013. The Feasibility Study will be completed by October 2016. Currently, the Corps is finalizing the scope of work with the contractors. At the completion of the Feasibility Study, the Construction Phase of the project is automatically authorized.
- The US Fish & Wildlife Service received a Department of Interior (DOI) Hurricane Sandy Grant for aquatic conductivity and fish passage in Wreck Pond. The project remains in the planning phase; the priority project will investigate how the potential installation of a secondary outfall pipe might allow for further flushing of Wreck Pond. Designs and additional funding are being explored. The grant was awarded in October 2013 and has a 2-year deadline for implementation with an option to extend the grant for an additional year. Other potential projects are: removing Black Creek Dam or adding a fish notch to allow for migratory fish to enter Black Creek; a fish ladder at Old Mill Pond to allow fish to pass Old Mill Dam; funding of phase two of the Sluice Gate to make it automatic; or fund portions of the living shoreline.
- Spring Lake Borough is in the process of installing a manual Sluice Gate using a Hazardous Mitigation Grant from Hurricane Irene. The Sluice Gate is being installed on the existing Wreck Pond outfall structure to allow control of the structure to prevent inflow of coastal storm surges, lower the pond in anticipation of fluvial flooding, and build pressure in the pond to release the water and flush sediment. The Sluice Gate is currently being fabricated with an installation date of April 2014.
- Monmouth County submitted a dredging application for Phase 3 dredging of Wreck Pond which will be a 4 to 5 year process (December 2014-December 2019). Because Wreck Pond is home to migratory fish, dredging may only take place in December. Monmouth County conducts mechanical dredging and is able to remove about 5,000 cubic yards a year (dredging in December only). Phase 3

will remove about 20,000 cubic yards from Wreck Pond on the west side of the 1st Avenue bridge. Phase 1 (December 2011) removed approximately 5,000 cubic yards of material west of Route 71 and phase 2 (December 2012) removed approximately 5,000 cubic yards of material between the outfall and the 1st Avenue bridge.

- Monmouth County is using a Corporate Business Tax Grant and 1985 Wastewater Treatment Grant to subcontract the development of the Wreck Pond Brook Watershed Restoration Implementation Plan by Najarian Associates, a conceptual design of a berm and living shoreline along Wreck Pond by Najarian Associates and Avakian Engineering to be completed by June, 2014; and a fish study to be conducted by American Littoral Society in Spring and Fall 2014 during the anadromous fish migrations. The Wreck Pond Brook Restoration Implementation Plan will identify specific projects that will be eligible for future 319(h) grant funding in the upper watershed such as stream bank restoration (identified by Freehold Soil Conservation District during stream assessment), outfall stabilization, and stormwater management measures.
- DEP submitted a Wreck Pond restoration proposal for the DOI Hurricane Sandy Mitigation Project Competitive Grant in January 2014. The proposal consists of planning, designing, engineering, implementing and monitoring to create a vegetated berm and living shoreline to the extent feasible along Wreck Pond in Spring Lake, Spring Lake Heights and Sea Girt. A living shoreline is a method of shoreline stabilization that protects the coast from erosion while enhancing environmental conditions. It's an adaptive measure that offsets sea level rise and climate change by accretion. DEP proposes to create a living shoreline and vegetated berm using natural and nature based features to enhance resiliency and flood protection of surrounding coastal communities, stabilize shoreline, and reduce erosion while creating and enhancing coastal ecosystems and valuable habitat. The project entails grading, removing invasive species and planting native subaqueous vegetation, tidal wetlands and upland vegetation, and pairing with bioengineered natural materials (i.e., manmade coconut fiber logs). This results in creating riparian habitat, aquatic habitat and generating a connection between the two. Mussel restoration may be included to improve water quality by filtering the water as they feed. The proposal also includes a maritime forest on the back beach dunes to strengthen and inhibit breaches. The proposed berm will enhance resiliency and flood protection of the surrounding coastal communities by holding a larger volume of water which increases the flood capacity of the pond.
- The Wreck Pond Brook Watershed Stormwater Management Plan Committee, Educational Subcommittee along with Rutgers Cooperative Extension and Clean Ocean Action has conducted several educational and volunteering events, from non-point source pollution seminars to rain barrel build workshops to community clean ups, maintenance of rain gardens and educational walking tours.

Beachwood

Wet Weather Monitoring

In 2009, 2010, 2011, and 2012, ten river beaches in Ocean County were sampled during wet weather conditions to determine whether increased rainfall contributed to increased levels of bacteria at bathing beaches (<http://www.njbeaches.org/ocean2009to2012rainfallccmp.pdf>). The data was inconclusive in 2009, and due to the lack of rain events in 2010, the Ocean County Health Department continued the study in 2011 and 2012. They also conducted several rounds of dye testing in order to gather additional data. Ocean County Health Department did not continue wet weather monitoring in 2013 due to a lack of funds. At this time, there is no clear correlation between rainfall and increased bacteria levels at these beaches. Additional water quality monitoring performed in 2011 by the Marine Academy of Technology and Environmental Science (MATES), a magnet public high school in Ocean County, indicated that increased rainfall lead to increased bacteria levels at beaches in Pine Beach and Beachwood. In 2012, DEP's Bureau of Marine Water Monitoring responded to a complaint in South Toms River. Further investigation and sanitary survey identified a community of live-aboard vessels at an upstream marina without connection to proper sanitary facilities. DEP, South Toms River Township and the Ocean County Health Department have worked together to relocate residents and clean the facility (including a boat scrap yard). DEP's Bureau of Marine Water

Monitoring reviewed all existing monitoring results for Beachwood Beach and found that during dry conditions, there was still a 23% chance of exceeding the bacterial water quality standard. Wet conditions also increased the chance of exceeding the standard. In addition, the Bureau of Marine Water Monitoring conducted the following monitoring studies throughout the Toms River: a dry weather ebb tide study in August, a dry weather flood tide study in September, a storm study in October, a second dry weather ebb tide study in October, and a second dry weather flood tide study in November. Ocean County Health Department conducted several dye tests to ensure nearby bathrooms did not have any illicit connections. It appears that the upper watershed of the Toms River does not impact Beachwood Beach, but that there is a localized source. At the same time, the Ocean County Roads Department cleaned and conducted video surveillance of all County and Borough owned storm sewers in Beachwood. Additionally, the New Jersey Department of Transportation also cleaned and conducted video surveillance of their storm sewers in Beachwood. There were two blockages in the system due to root infiltration of old terracotta pipe. One of the blockages was in a recharge system and therefore does not impact the beach. The second blockage may be a source of bacteria because it discharges to an outfall in close proximity of the beach. Ocean County Engineering Department agreed to replace this section of storm sewer for Beachwood Borough prior to the 2014 beach season as part of their shared services agreement. The second round of ebb and flood tide studies coincided with the completion of Ocean County Roads Department cleaning the storm sewer systems. The results showed a significant reduction in bacteria when compared to the results of the first round of ebb and flood tide studies conducted prior to the storm system cleaning. Ocean County Roads Department has agreed to clean the county and borough owned storm sewers again prior to the 2014 beach season. In addition, Beachwood Beach has a nearby Municipal Marina and has committed to participating in the “Clean Marina” program.

Significant progress has been made in Beachwood, and all of the above activities have contributed to lower bacteria results at the beach. However, there are two stormwater outfalls that continue to discharge storm water on or near the bathing area. Due to the location of the beach and topography of the river, any possible flushing current is confined to a small area that does not allow for quick mixing after storm events. DEP’s Bureau of Marine Water Monitoring will be conducting a flow study using fluorescents and additional storm studies to collect supplemental data. Beachwood Borough has submitted an application for a Clean Water State Revolving Fund Loan through New Jersey Environmental Infrastructure Trust to relocate (extend, or redirect drainage from) the borough and county outfalls that are in close proximity to the bathing beach. This project remains in the planning and design phase, and will not be completed before the 2014 beach season. DEP will continue to work with partners to identify any additional potential sources of contamination to the Toms River beaches.

Coastal Incidents of Note – 2013

The following incidents received public, DEP, and local health agency attention in 2013, although the incidents did not always require beach closings:

On July 3, a portable latrine fell off of a truck that was on the beach during a beach replenishment project in Ship Bottom. The latrine was believed to be clean and unused but the local health department closed 8 blocks of beaches from 16th Street to 24th Street for 24 hours as a precaution.

On July 12, one syringe was found by a beachgoer in Bradley Beach. No other trash or waste was found and no beaches were closed.

On July 15, the Long Beach Island Health Department reported that wire pieces were washing up onto beaches in Beach Haven and Spray Beach. The wire was likely from dune fencing that washed into the ocean after Superstorm Sandy. Advisories were posted on the NJDEP web page and also throughout Long Beach Island. No beaches were closed; however, small wire pieces continued to wash in for several days.

On July 17, the DEP hotline received a report that small wood and other debris items were washing onto the beach at Belmar the previous day. The Monmouth County Health Department responded to the beach to survey and spoke to lifeguards who confirmed the report. No additional items washed in.

On July 18, the DEP hotline received a report that trash was washing onto the beaches at Jenkinson's Beach in Pt. Pleasant. The Ocean County Health Department was notified. The DEP flight observer could not see any debris from the air.

On July 19, the Monmouth County Regional Health Commission responded to a complaint of black water due to dredging operations at the Monmouth Beach Club. Two water quality samples were collected and analyzed for bacteria. The bacteria standard for bathing waters in 104 enterococci/100 mL of sample and both samples had bacteria results of <10.

On July 26, the DEP hotline received a report that five syringes and one blood vial were found on the beach at Island Beach State Park. Lifeguards surveyed and raked the beaches over the weekend and found a total of 36 syringes and other trash and debris consistent with a combined sewer overflow event. All medical-type material was turned over the NJ Division of Criminal Justice for review. No beaches were closed.

On July 26, 9 dead dolphins washed onto beaches in Long Beach Island and Ocean City. This report began a series of reports of dead and dying dolphins along the east coast. The New Jersey dolphins were originally believed to have been unintentionally caught in commercial fishing nets. Many more dolphins were found dead and dying along the east coast and studies indicated that the majority of the dolphins died from a morbillivirus infection. This virus is similar to human measles but is not transferrable to humans.

On July 26 and 27, a large washup of floatable debris was reported at 7 Presidents Park in Long Branch. The debris was cleaned from the beach and no beaches were closed due to the event.

In July and early August, the DEP received a number of complaints about muck, ooze, dark sand and hard rock on several beaches in Brick Township that were being replenished during the summer. The beaches were inspected, and sand and water were tested. The ooze was determined to be water that was flushing out of the sand after being deposited on the beach and the sand was dark because it had not had a chance to be bleached by the sun. All water quality samples came back within the standard and sand samples were found to be clean.

On August 8, three beaches in North Wildwood were closed as a precaution due to sewage spill to a storm drain that leads to the ocean. Approximately 500-600 gallons of sewage spilled to the storm drain but it was believed that the spill was contained in the storm drain. All water quality samples were within the standard and the beaches were opened the next day.

Relative Status of New Jersey Beach Water Quality

According to the latest data from an assessment report of the nation's beaches, New Jersey's beach water quality at nearly 700 public recreational bathing beaches is among the best in the country.² In 2012, the most recent year for which data is available, New Jersey ranked 7th in the nation for beach water quality (Figure 9). States are ranked by total number of exceedances of the standard as reported to EPA. The state ranked 1st in the nation had the lowest number of exceedances; the state ranked 30th had the highest number of exceedances. This good water quality is also reflected in the number of days the beaches were open to the public in New Jersey. With 665 lifeguarded marine beaches in New Jersey and 16 weeks to the bathing season, New Jersey had a total of 74,480 beach-days available in 2012. In 2012, there were a total of 190 beach closings, representing 0.26% of the available beach days. In other words, when the public in New Jersey went to the beach in 2012, they found the beach was open for bathing 99.7 percent of the time. As Figure 8 shows,

² National Resources Defense Council: Testing the Waters 2013, A Guide to Water Quality at Vacation Beaches

according to EPA, New Jersey has among the highest percentage of beaches open on the East Coast in 2012, the most recent year data is available.

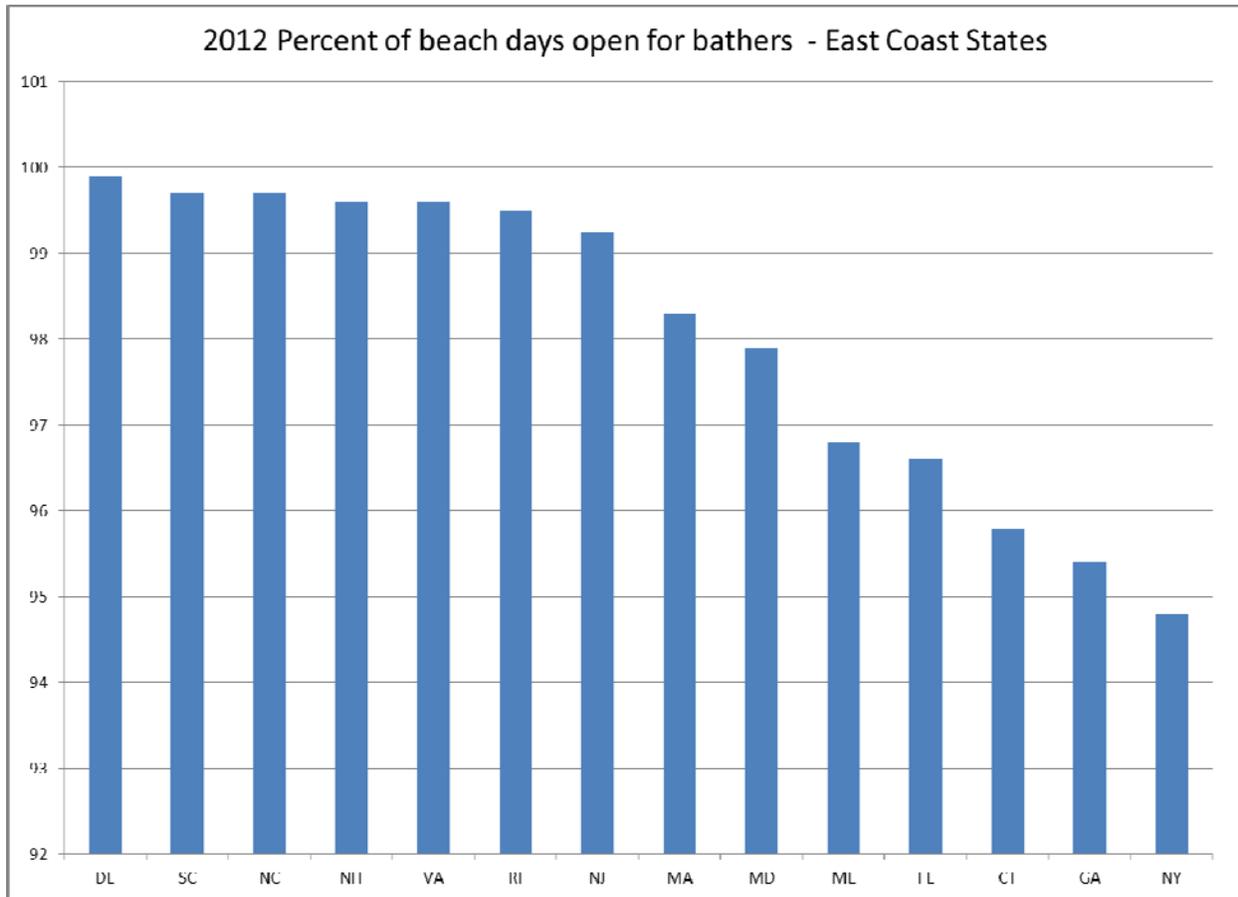


Figure 8. Percent of beach days available to bathers based on USEPA data. Beach days are defined as the # of beaches open multiplied by the # of days in the beach season.

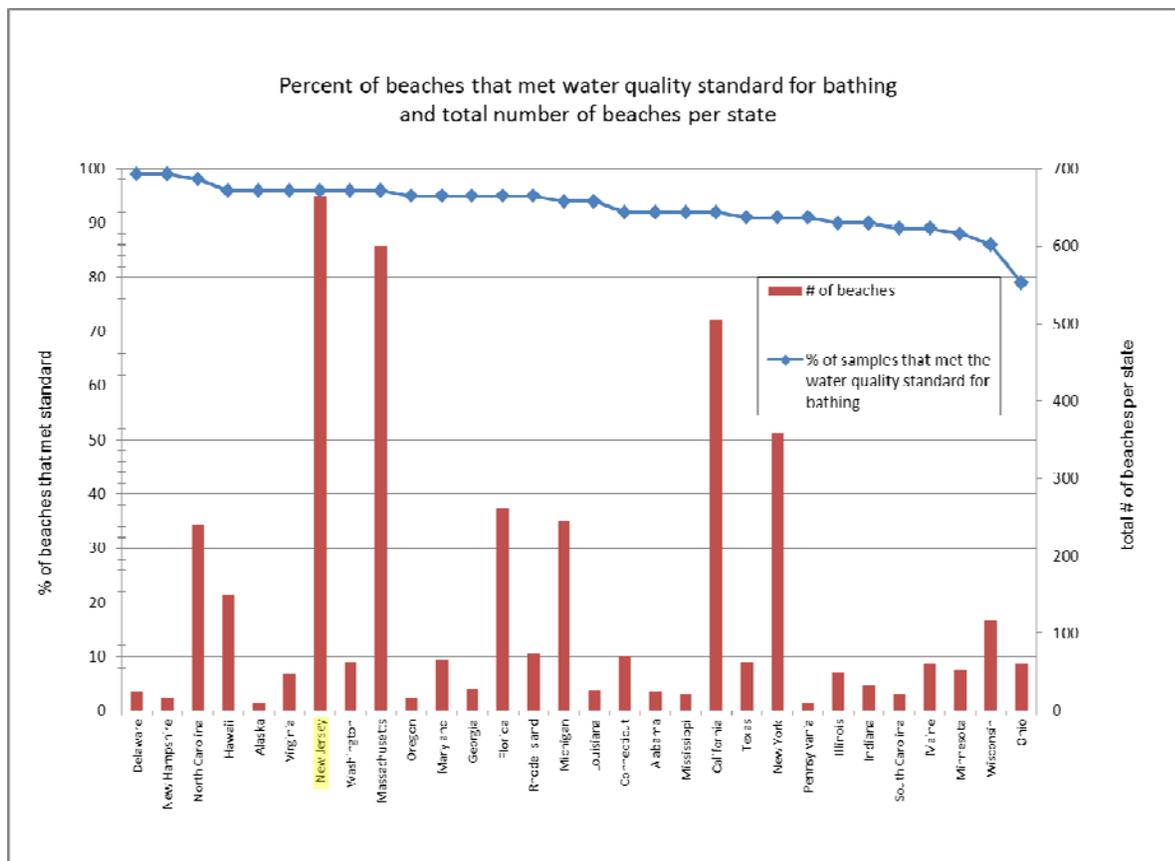


Figure 9. Ranking of states based on percentage of beach water quality samples meeting the bacteria standard.

Related Program:

Clean Shores

Non-recreational shorelines that have been left unattended serve as reservoirs for floatable debris and trash that can be refloated during coastal storms and extreme high tides. This trash and debris can wash up on recreational beaches, become floating hazards to navigation, or impact marine life. DEP has a unique program that uses state correctional facility inmates to remove floatable debris from the shorelines of the Hudson, Raritan, and Delaware estuaries, tidal shorelines and barrier island bays. The Clean Shores Program conducts these shoreline cleanups year-round. The program is entirely funded by the sale of the “Shore to Please” license plates. In January 2010, the Clean Shores Program was suspended for four months due to a shortfall in revenue from the sale of the Shore to Please license plates. The program was reinstated in early May 2010. From May – December 2010, Clean Shores removed 3.96 million pounds of trash and debris from 43.8 miles of shoreline. The reduced mileage is due to a focused effort in the northern area of the state with heavy concentrations of timbers and trash. In 2011, the program removed 3.36 million pounds of trash and debris from 99.5 miles of shoreline (Figure 10). The mileage cleaned and total number of pounds of debris removed changes each year depending on the number and severity of coastal storms and their impact on shorelines. Hurricane Irene impacted some beaches, mostly in the northern area of the state, and the Clean Shores Program provided assistance to towns as requested. In 2012, the program removed 3.36 million pounds from 94.4 miles of shoreline. In 2013, a total of 3,320,200 pounds of trash and debris were removed from 88.2 miles of tidal shorelines. This amount was expected to increase in 2013 after Superstorm Sandy; however, the State of New Jersey contracted to have large amounts of debris removed from coastal waterways and shorelines. This work aided the Clean Shores Program and reduced the amount of storm debris that might otherwise have been deposited on tidal shorelines.

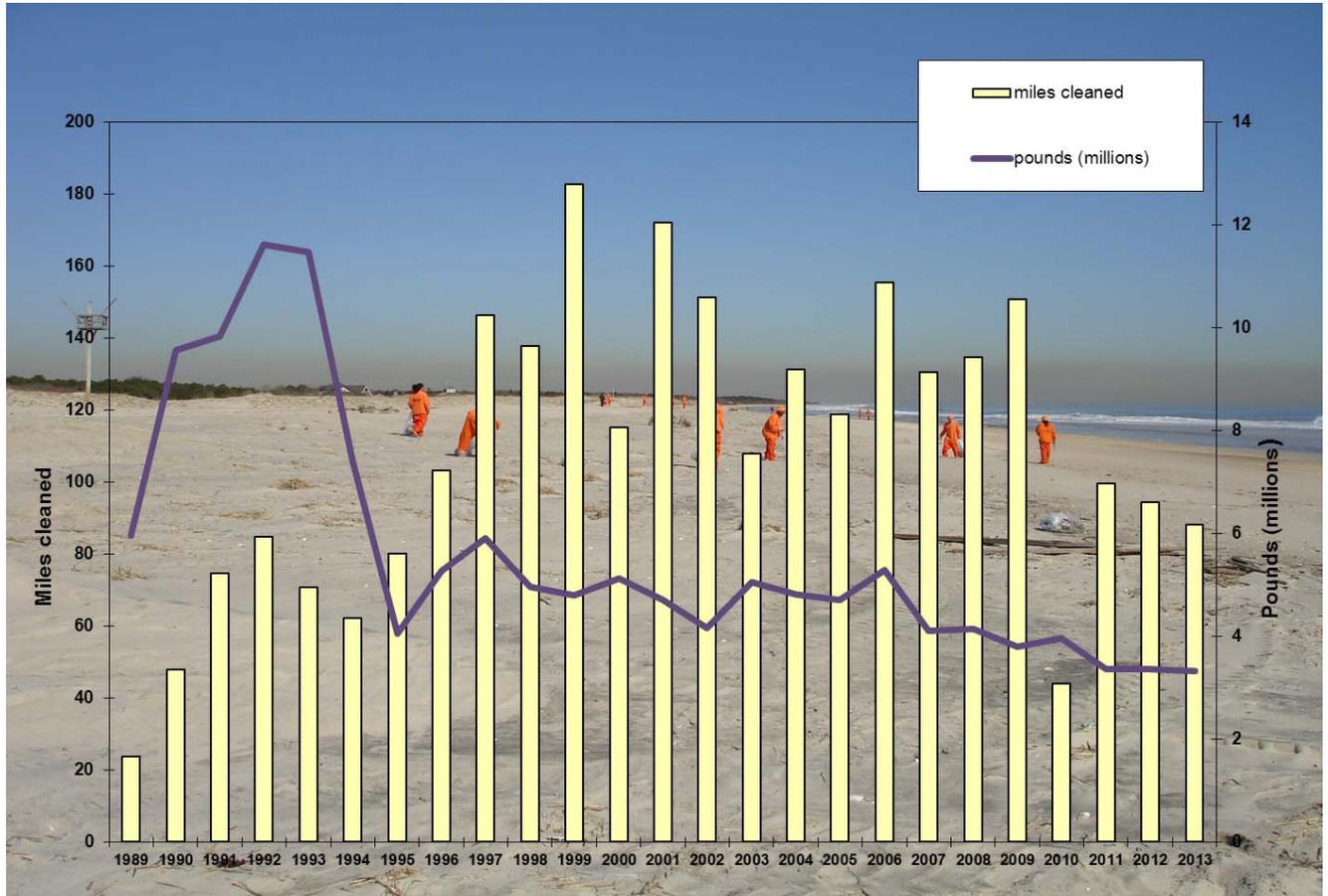


Figure 10: Total amount of debris removed by Clean Shores Program since start of program.



Additional Information

For additional information about the CCMP, the Clean Shores Program or New Jersey’s beach monitoring in general, contact Virginia Loftin at 609-984-5599 or Virginia.Loftin@dep.nj.gov or visit the Program’s website at www.njbeaches.org.

GET BEACH WATER INFO - WWW.NJBEACHES.ORG

Appendix 1

Wastewater Treatment Facilities Discharging to the Nearshore Coastal Waters

- 1 Monmouth County Bayshore Regional Sewage Authority
- 2 Township of Middletown Sewage Authority
- 3 Northeast Monmouth Regional Sewerage Authority
- 4 Long Branch Sewerage Authority
- 5 Township of Ocean Sewerage Authority
- 6 Asbury Park Sewerage Authority
- 7 Township of Neptune Sewerage Authority
- 8 South Monmouth Regional Sewerage Authority
- 9 Ocean County Utilities Authority, Northern
- 10 Ocean County Utilities Authority, Central
- 11 Ocean County Utilities Authority, Southern
- 12 Atlantic County Utilities Authority
- 13 Cape May County Municipal Utilities Authority, Ocean City
- 14 Cape May County Municipal Utilities Authority, Seven Mile Middle
- 15 Cape May County Municipal Utilities Authority, Wildwood
- 16 Cape May County Municipal Utilities Authority, Cape May Point
- 17 Lower Township Municipal Utilities Authority

Appendix 2

2013 Beach Actions

Date	County	Municipality	Beach	Ocean/Bay	Beach Action	Comments
5/21/2013	MONMOUTH	NEPTUNE TWP	Shark River Beach and Yacht	Bay	precautionary rainfall closure	Beach not open yet. Rainfall 0.54".
5/25/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	CLOSURE	over 0.1 inches of rain over 0.1 inches of rain
5/25/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	CLOSURE	over 0.1 inches of rain
5/25/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	CLOSURE	over 0.1 inches of rain
5/25/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	CLOSURE	over 0.1 inches of rain
6/4/2013	MONMOUTH	NEPTUNE TWP	Shark River Beach and Yacht	Bay	precautionary rainfall closure	Beach not open yet. Rainfall 0.48".
6/4/2013	MONMOUTH	HIGHLANDS BORO	Miller Beach	Bay	Advisory	Beach not open yet. Rainfall 0.82".
6/4/2013	MONMOUTH	LONG BRANCH CITY	North Bath	Ocean	Advisory	Beach not open yet during week. Rainfall 0.39".
6/4/2013	MONMOUTH	SPRING LAKE BORO	Worthington	Ocean	Advisory	Beach not open yet during week. Rainfall 0.48".
6/5/2013	OCEAN	ISLAND HEIGHTS BORO	Summit	Bay	Advisory	
6/8/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	4.26" of rain
6/8/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	4.26" of rain
6/8/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	4.26" of rain
6/8/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	4.26" of rain
6/9/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	4.26" of rain
6/9/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	4.26" of rain
6/9/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	4.26" of rain
6/9/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	4.26" of rain
6/11/2013	MONMOUTH	NEPTUNE TWP	Shark River Beach and Yacht	Bay	precautionary rainfall closure	Beach not open yet. Onshore wind.
6/11/2013	OCEAN	PINE BEACH BORO	East Beach Station Ave	Bay	Advisory	
6/12/2013	ATLANTIC	SOMERS POINT CITY	New Jersey Ave	Bay	CLOSURE	
6/18/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	.26" of rain
6/18/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	.26" of rain
6/18/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	.26" of rain
6/18/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	.26" of rain
6/19/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	.93" of rain
6/19/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	.93" of rain
6/19/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	.93" of rain
6/19/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	.93" of rain
6/27/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	.12" of rain
6/27/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	.12" of rain
6/27/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	.12" of rain
6/27/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	.12" of rain
7/2/2013	OCEAN	BRICK TWP	Windward Beach	Bay	Advisory	170CFU
7/3/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	1.93" of rain
7/3/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	1.93" of rain
7/3/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	1.93" of rain
7/3/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	1.93" of rain
7/3/2013	OCEAN	SHIP BOTTOM BORO	20th St	Ocean	precautionary	Empty Portable Latrine fell in Ocean
7/9/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	.25"
7/9/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	.25"
7/9/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	.25"
7/9/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	.25"
7/9/2013	OCEAN	BEACHWOOD BORO	Beachwood Beach West	Bay	Advisory	
7/10/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	.88" of rain
7/10/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	.88" of rain
7/10/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	.88" of rain
7/10/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	.88" of rain
7/10/2013	OCEAN	BEACHWOOD BORO	Beachwood Beach West	Bay	precautionary rainfall closure	
7/11/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	.1" of rain
7/11/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	.1" of rain
7/11/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	.1" of rain
7/11/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	.1" of rain
7/11/2013	OCEAN	BEACHWOOD BORO	Beachwood Beach West	Bay	CLOSURE	
7/12/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	.37" of rain
7/12/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	.37" of rain
7/12/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	.37" of rain
7/12/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	.37" of rain
7/12/2013	OCEAN	BEACHWOOD BORO	Beachwood Beach West	Bay	CLOSURE	
7/23/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	0.41" of rain
7/23/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	0.41" of rain
7/23/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	0.41" of rain
7/23/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	0.41" of rain
7/23/2013	OCEAN	LONG BEACH TWP	New Jersey	Bay	Advisory	
7/23/2013	OCEAN	BEACHWOOD BORO	Beachwood Beach West	Bay	Advisory	
7/24/2013	OCEAN	BEACHWOOD BORO	Beachwood Beach West	Bay	CLOSURE	
7/25/2013	OCEAN	BEACHWOOD BORO	Beachwood Beach West	Bay	CLOSURE	
7/26/2013	OCEAN	BEACHWOOD BORO	Beachwood Beach West	Bay	CLOSURE	
7/29/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	0.45" of rain
7/29/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	0.45" of rain
7/29/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	0.45" of rain
7/29/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	0.45" of rain
7/30/2013	OCEAN	BEACHWOOD BORO	Beachwood Beach West	Bay	Advisory	
7/30/2013	OCEAN	PINE BEACH BORO	East Beach Station Ave	Bay	Advisory	
7/30/2013	OCEAN	PINE BEACH BORO	West Beach Avon Rd	Bay	Advisory	
7/30/2013	OCEAN	OCEAN GATE BORO	Wildwood	Bay	Advisory	
8/2/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	0.52" of rain
8/2/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	0.52" of rain
8/2/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	0.52" of rain
8/2/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	0.52" of rain

8/6/2013	OCEAN	BARNEGAT LIGHT BORO	25th St	Bay	CLOSURE	
8/8/2013	CAPE MAY	NORTH WILDWOOD CITY	21st Ave	Ocean	precautionary closure	
8/8/2013	CAPE MAY	NORTH WILDWOOD CITY	19th Ave	Ocean	precautionary closure	
8/8/2013	CAPE MAY	NORTH WILDWOOD CITY	20th Ave	Ocean	precautionary closure	
8/8/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	0.87" of rain
8/8/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	0.87" of rain
8/8/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	0.87" of rain
8/8/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	0.87" of rain
8/13/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	0.18" of rain
8/13/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	0.18" of rain
8/13/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	0.18" of rain
8/13/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	0.18" of rain
8/20/2013	OCEAN	BARNEGAT LIGHT BORO	25th St	Bay	Advisory	
8/20/2013	OCEAN	LONG BEACH TWP	Stockton Ave	Ocean	Advisory	
8/22/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	0.2" of rain
8/22/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	0.2" of rain
8/22/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	0.2" of rain
8/22/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	0.2" of rain
8/24/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	0.12" of rain
8/24/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	0.12" of rain
8/24/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	0.12" of rain
8/24/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	0.12" of rain
9/1/2013	MONMOUTH	SPRING LAKE BORO	Brown Ave S	Ocean	precautionary rainfall closure	0.26" of rain
9/1/2013	MONMOUTH	SEA GIRT BORO	The Terrace	Ocean	precautionary rainfall closure	0.26" of rain
9/1/2013	MONMOUTH	SPRING LAKE BORO	York Ave	Ocean	precautionary rainfall closure	0.26" of rain
9/1/2013	MONMOUTH	SEA GIRT BORO	Beacon Blvd	Ocean	precautionary rainfall closure	0.26" of rain