



RHODE ISLAND DEPARTMENT OF HEALTH BEACH MONITORING PROGRAM

2007 Season Report



www.ribeaches.org

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Executive Summary

The Rhode Island Department of Health (HEALTH) is responsible for the licensing and regulating of bathing beach facilities in the State of Rhode Island. With help from the United States Environmental Protection Agency (USEPA), HEALTH monitors all 119 licensed beaches throughout the State. Licensed beaches include salt and freshwater, as well as public and private facilities.

The water quality sampling is carried out at a frequency determined by HEALTH's risk based monitoring plan. Based on this plan, and with funding provided by the USEPA, sampling is conducted by HEALTH throughout the beach season at saltwater beaches. Freshwater beach sampling is not currently funded. Therefore, HEALTH requires licensed freshwater facility managers to sample bathing waters adjacent to their facilities.

From May to September 2007, HEALTH collected approximately 1,718 samples from all 69 licensed saltwater bathing beaches. Approximately 1,000 samples were collected by the 50 licensed freshwater facilities. All samples were analyzed for Enterococci, as required in the federal Beaches Environmental Assessment and Coastal Health (BEACH) Act.

The 2007 bathing season saw a significant decrease in beach closures and closure days from the 2006 season. Whereas 351 beach closure days were recorded for 2006, 96 beach closure days were recorded for 2007. The intensity and total volume of rainfall was lower during the summer of 2007 (June 1 to August 31) than the summer of 2006. Total rainfall decreased from 14.65 inches in 2006 to 8.28 inches in 2007. Significant rainfall instances (>.50" in a 24-hour period from June 1-August 31 at TF Green) were similar, with 5 instances in 2006 and 6 instances in 2007.¹

Furthermore, as HEALTH refines its sampling strategies, monitoring efforts are focused in areas of greatest concern and sample collection is targeted for times when high bacteria counts are most likely to be present. It should be noted that total closure data is based on federally funded saltwater beach sampling *and* privately funded freshwater beach sampling.

¹ <http://www.erh.noaa.gov/box/dailystns.shtml> NOAA Northeast Environmental Climate Data website.

1.0 PROGRAM ACTIVITIES

1.1 Mission

The mission of HEALTH's Beach Monitoring Program is to protect the public from illness associated with swimming in contaminated bathing waters. HEALTH licenses recreational bathing beaches throughout the state. This authority has been granted to HEALTH through the General Laws of Rhode Island (**Appendix A**)². Regulations require HEALTH to ensure beach water meets bacteriological standards and if those standards are not met the facility's license can be suspended until bacteria levels are within acceptable limits.

1.2 Background

HEALTH began monitoring beaches in the summer of 1995. Bathing beaches monitored under this program are licensed as Recreational Facilities by HEALTH. Prior to 1995, the Rhode Island Department of Environmental Management was responsible for monitoring beaches. A "bathing beach" is defined by HEALTH as an natural area or tract of land that is used in connection with swimming and/or bathing in any waters of the state provided:

- a) It is open to the public by permit and/or payment of a fee; or
- b) It is maintained as a private club or association requiring membership fees or dues; or
- c) It is maintained with or without charge for the recreation of groups of ten (10) or more children.

Licensing requires facilities to have electrical service; refuse storage and disposal; sewage disposal facilities; adequate toilets, showers, or lavatories with hot and cold running water; a drinkable water supply; and the water adjacent to a bathing beach must meet bacteriological standards. From approximately 1995 to 1999, beach monitoring was inconsistent and most beaches were only monitored once per season.

In 1999, development of a comprehensive beach monitoring program began under a USEPA Environmental Monitoring for Public Access and Community Tracking (EMPACT) Grant titled Bacterial Water Quality Monitoring at Upper Narragansett Bay Bathing Beaches. This grant enabled HEALTH to establish a public notification system that included a website, telephone hotline, and a beach flagging system. HEALTH also evaluated conditions in Upper Narragansett Bay, which has long been impacted by urban runoff, point source discharges, and combined sewer overflows.

The EMPACT Program provided HEALTH the resources to sample 23 stations in the Upper Narragansett Bay (7 stations were located at licensed beaches) in wet and dry weather. The conclusion of this study determined that additional sampling was needed at the licensed Upper Bay beaches to adequately protect the public. Also, it was determined that areas north of Conimicut Point in Warwick and Nayatt Point in Barrington were not suitable for licensing at this time. Water quality, especially during wet weather, represented an unacceptable risk to public health.

In 2000, Congress enacted the Beaches Environmental Assessment and Coastal Health (BEACH) Act, an amendment to the Federal Water Pollution Control Act (a.k.a. The Clean Water Act),

² R.I.G.L. Chapter 23-21

which authorized USEPA to distribute grants to eligible states and Indian tribes to reduce the risk of disease and illness in the nation's bathing waters. State objectives under this program were published by the USEPA in June 2002. The National Beach Guidance and Required Performance Criteria for Grants document outlined several requirements of the BEACH Act which include: a list and categorization of beaches according to risk, identification and mitigation of sources of pollution that may have an impact on bathing waters, the development of a risk communication plan, and providing USEPA with specific beach monitoring information³.

Since 2000, the USEPA has provided HEALTH with over \$1 million in beach grants to manage Rhode Island's Beach Monitoring Program. These grants have provided HEALTH the resources to vastly improve the beach-monitoring program and to develop a broad base of knowledge at Rhode Island's licensed beaches.

1.3 Program Staff

The Beach Monitoring Program currently consists of two full time employees, a Beach Program Coordinator and a Beach Program Assistant. The Chief of the Office of Food Protection, under which the Beach Program Office is designated, as well as the Chief Environmental Health Food Specialist, provide additional oversight and coordination. The Beach Monitoring Program is also aided by a Chief Clerk who helps handle ordering supplies, travel issues, and mileage and timesheet reporting with the State of Rhode Island.

Three interns are hired during the summer months to handle sampling efforts. Two interns are designated samplers. The samplers go out each morning to collect samples at beaches determined by the Beach Program Coordinator and/or Beach Program Assistant. After samples have been collected and submitted to the laboratory the samplers come into the office to enter in their daily observations at the beaches into the beaches database system. One intern is stationed in the laboratory and handles all necessary set-up/prep of sample containers and analysis equipment.

1.4 Events

In August of 2008, the Beach Program was asked to report on beach water quality and sampling efforts on the WPRI, Channel 10 Watershed Watch Report. A small segment on the news was dedicated to showing how samples are collected at the beach and discussing beach water quality.

The Beach Program regularly attends and organizes meetings with town managers, public works departments and interested individuals in order to discuss beach issues. Meetings are regularly held with the City of Warren, City of Newport and Town of Middletown.

1.5 Funding and Budget Information for 2007 Beach Season

During the 2007 beach season, EPA provided HEALTH with \$212,640 for the Beach Monitoring Program. These funds support the primary Beach Monitoring Program activities which include: sanitary surveys to identify risk and potential sources of fecal contamination at beaches; development and implementation of a risk based monitoring plan; and bacteriological testing at saltwater beaches. During the 2007 season, 119 bathing beaches met the "bathing beaches" criteria above and were licensed with HEALTH as recreational facilities (69 of the bathing beaches were saltwater).

³ 33 U.S.C. 1362 sections 104, 303, 406, 502, and 518(e)

The following table summarizes how funds were spent:

Budget Category	Percentage of Grant
Salaries for Staff	52.19 %
Supplies and Equipment (including laboratory analysis of sample results)	19.48 %
Interns (including mileage for sampling efforts)	15.40 %
Miscellaneous Administrative Costs	10.66 %
Travel for Full Time Staff (including mileage, conferences, training, etc.)	3.26 %

Currently, USEPA grants do not provide funds to monitor freshwater bathing beaches. Freshwater beach managers are responsible for sampling on a HEALTH approved sampling schedule, submitting the samples for laboratory analysis at a state certified laboratory, and submitting the results to HEALTH in a timely manner.

1.6 Sampling

In 2003, sample frequencies at all beaches were increased to provide HEALTH an expanded view of water quality throughout Rhode Island waters. Beaches previously exempt from monitoring activities were sampled, and beaches with known problems were sampled at a much greater frequency. The sample results were necessary in order to refine HEALTH's risk based monitoring plan. Several beaches were moved to a Tier I sample schedule, which is the highest risk level and requires a minimum of once per week sampling. Pollution sources were documented and additional sampling was conducted to protect public health. Based on assessment of the 2003 sample results, samples have been collected on a predetermined schedule during subsequent bathing seasons. Continued evaluation of sample results is conducted in order to refine sample frequency.

Lab results are faxed or emailed immediately to HEALTH and the facility operator. If any action is necessary, the beach manager is notified and HEALTH's public notification procedures are followed. Upon closure, the facility is required to test daily until bacteria levels fall within acceptable limits. When it is determined that bacteria levels permit the re-opening of a facility, notification procedures are followed to inform the public of the change of status. Current public notification procedures in place include; a 24 hour hotline, website (www.ribeaches.org), and a standard press release which is faxed to 22 major TV, radio, and print media outlets throughout Rhode Island.

During the 2007 bathing season HEALTH was provided with federal funds to monitor all 69 licensed saltwater bathing beaches. From May to September, 1,718 tests were analyzed for Enterococci. Please note that this sample count does not include approximately 1,000 samples submitted by Beach Operators throughout the season, which are received and reviewed by HEALTH. The 2007 bathing season was the fourth season HEALTH made open/closure decisions based on the USEPA recommended indicator bacteria Enterococci.

1.7 Standards

The Rhode Island Department of Environmental Management (RIDEM) and USEPA set water quality standards. Rhode Island's current bathing water standards are as follows: saltwater bathing waters must not exceed a single sample standard of 104 colony forming units (cfu) per 100 milliliters (mL) of Enterococci and freshwaters must not exceed 61 cfu/100mL of Enterococci.

2.0 PROGRAM DELIVERABLES

2.1 24-Hour Telephone Hotline (401.222.2751)

HEALTH set up a 24-hour telephone hotline so that the public can call anytime to find out about beach closures and advisories. The hotline is updated as needed, but typically daily during the summer months. A typical script for HEALTH's 24-hour telephone hotline can be found below.

“Hello, you have reached the Rhode Island Department of Health’s Bathing Beaches Hotline. The following licensed beaches are closed due to high bacteria levels...(list beaches). Also, there are...(number of advisories) advisories in effect. An advisory has been issued for Upper Narragansett Bay. The Department of Health discourages swimming and other full body contact activities north of Conimicut Point. These waters are directly affected by pollution inputs due to heavy rains and discharges from area wastewater treatment facilities. Water contact should be avoided for a minimum of three days after heavy rainfall. For more information please contact us at 222-2749 or visit our website at www.ribeaches.org. If this is an after hours emergency please call 272-5952.”

2.2 Beach Monitoring Website (www.ribeaches.org)

HEALTH initially created a Beach Monitoring website through an EPA EMPACT grant in 2000. This website has been updated to include current sample data and additional beach related information. The website lists all beach water quality data collected during the bathing season and contains a current list of closures and advisories. The Beach Monitoring website has been expanded to include maps of licensed bathing beaches and sample stations. Over the past year, HEALTH has worked with Garrison Enterprises (the Beach Program Database Contractor and Website Manager) to develop the maps as part of Google's™ mapping system. The public can therefore click on a map for any beach, see where samples are collected and zoom in and out as desired using either a street map, an aerial photograph or a hybrid. Also, being offered since the 2005-bathing season is the RIBeach Watch service, which allows the public to sign up and receive email notifications whenever a sample or closure/opening event occurs at their favorite beach. **Appendix D** shows the www.ribeaches.org homepage for the beach program.

2.3 Sanitary Surveys

In order to adequately assess the risk to bathers and classify saltwater bathing beaches HEALTH developed a Beach Sanitary Survey. Beach surveys were started during the 2002 bathing season and were completed before the start of the 2003 bathing season. Evaluation criteria were derived from the following sources: *National Beach Guidance and Required Performance Criteria for Grants – Appendix G*, materials from the Food and Drug Administration’s *Applied Concepts in Sanitation Surveys of Shellfish Growing Areas* course, and materials from the joint DOE/EPA *Water Quality Standards Academy*. Surveys were developed to evaluate and review existing information and current conditions at the beach.

Sanitary Surveys are currently underway at all saltwater beaches throughout the State. HEALTH plans to finish with all surveys by the end of 2008. As surveys are completed, data collected is analyzed and used to determine what changes, if any, need to be made to sample location, frequency, etc. at a particular beach. A more detailed discussion of Sanitary Surveys can be found in Section 3.1.3.

In addition to sanitary surveys, which are conducted a minimum of every five years; beach samplers are given a daily survey form to complete at each beach during each sampling event. The data on this form is entered on a daily basis into our database system. This survey form provides further information on beach conditions, thereby increasing monitoring effectiveness.

3.0 PERFORMANCE CRITERION

EPA developed nine performance criteria for the implementation of monitoring, assessment and notification programs. In order to be eligible for a beach grant, the states, tribes or local government's monitoring and notification program must be consistent with the performance criteria. The following sections describe the performance criteria, and Rhode Island's compliance with them.

3.1 Risk-Based Beach Evaluation and Classification Plan (Performance Criterion 1)

To evaluate and classify risk at Rhode Island's licensed saltwater beaches the following steps were taken: identification of saltwater recreational waters, identification of bathing beaches, beach evaluations – sanitary surveys, water quality evaluations, and procedures for a change in classification.

3.1.1 Identification of Coastal Recreational Waters

The Rhode Island Department of Environmental Management (RIDEM) is responsible for the classification of waters along Rhode Island's 420 miles of coastline⁴. Coastal waters are classified as SA, SB, SB1, or SC. RIDEM's Use Classification definitions are found below:

(a). Class SA- These waters are designated for shellfish harvesting for direct human consumption, primary and secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation and industrial cooling. These waters shall have good aesthetic value.*

(b). Class SB- These waters are designated for primary and secondary contact recreational activities; shellfish harvesting for controlled relay and depuration; and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.*

(c). Class SB1- These waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However all Class SB criteria must be met.*

(d). Class SC- These waters are designated for secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.*⁵

No waters of the state are designated as SC. All licensed bathing areas are located in Class SA or SB waters.

RIDEM designates all coastal waters of the state as "swimmable". RIDEM has determined 69% of estuarine waters (108.66 square miles) fully support all uses, while 30% of waters (47.57

⁴ "NOAA Coastal Zone Management-Rhode Island Coastal Management Program"

<http://www.ocrm.nos.noaa.gov/czm/czmrhodeisland.html>

⁵ "Water Quality Regulations". State of Rhode Island and Providence Plantations-Department of Environmental Management Water Resources: August 6, 1997 (Regulation EVM 112-88.97-1).

square miles) are considered impaired for one or more uses. RIDEM states 90% of the State's estuarine waters (140.3 square miles) meet their swimming use, while 10 % (15.45 square miles) are considered impaired due to violations of the Fecal Coliform criteria.⁶

3.1.2 Identification of Bathing Beaches

Statutes (R.I.G.L. 23-21-Relating to Licensing of Recreational Facilities & R.I.G.L. 23-21.1 Sanitation Standards for Bathing Beaches) require HEALTH to license recreational facilities, which include bathing beaches. A bathing beach, as found in regulations adopted pursuant to R.I.G.L. 23-21, is defined as:

'Bathing Beach' shall mean any natural area or tract of land, which is used in connection with swimming and/or bathing in any waters of the state provided:

- (a) *It is open to the public by permit and/or payment of a fee; or*
- (b) *It is maintained as a private club or association requiring membership fees or dues; or*
- (c) *It is maintained with or without charge for the recreation of groups of ten (10) or more children⁷*

HEALTH currently licenses 119 bathing beaches; this includes freshwater and saltwater facilities, as well as public and private bathing areas. There are 69 saltwater licensed beaches in 15 different communities.

As required in the BEACH Act, HEALTH has identified beaches and "similar points of access"⁸ which have the potential to be used by the public. HEALTH does not promote or endorse the use of non-licensed beaches for primary contact recreation. These areas are not monitored or inspected for safety. HEALTH always recommends swimming at designated, licensed bathing beaches.

3.1.3 Beach Evaluations – Sanitary Surveys

In order to adequately assess the risk to bathers and classify saltwater bathing beaches HEALTH developed a Beach Sanitary Survey. Beach surveys were started during the 2002 bathing season and were completed before the start of the 2003 bathing season. Evaluation criteria were derived from the following sources: *National Beach Guidance and Required Performance Criteria for Grants – Appendix G*, materials from the Food and Drug Administration's *Applied Concepts in Sanitation Surveys of Shellfish Growing Areas* course, and materials from the joint DOE/EPA *Water Quality Standards Academy*. Surveys were developed to evaluate and review existing information and current conditions at the beach.

⁶ *State of Rhode Island and Providence Plantations: 2004 Section 305(b) State of the State's Waters Report* State of Rhode Island and Providence Plantations, Department of Environmental Management Office of Water Resources.

⁷ "Rules and Regulations for Licensing of Recreational Facilities (R23-21-RF)". State of Rhode Island and Providence Plantations-Department of Health: June 1983 (as amended).

⁸ As identified in the Beaches Environmental Assessment and Coastal Health Act (P.L. 106-284)

Point values were assigned to each criteria and the total value was recorded. High point values were given to direct known sources of pollution (i.e. CSOs), high usage (>10,000 bathers), and to facilities that have exhibited poor water quality in the past (past closures).

Preliminary risk groups were given according to survey scores. Scores ranging from 0-75 were classified as Tier 3 (low risk); scores ranging from 76-100 were classified as Tier 2 (moderate risk); and scores greater than 101 were classified as Tier 1 (high risk). Additional sampling was conducted by HEALTH during the 2002-bathing season to better characterize water quality at the 69 saltwater beaches. Prior to 2002, 37 bathing areas were exempt from sampling. Additional sampling was required at these and other bathing areas to adequately assess conditions. Using best professional judgment HEALTH evaluated the results of this sample information and preliminary risk groups, then assigned final risk classifications. HEALTH continuously monitors each of the beaches to ensure that the Tier Classification and associated sample frequency adequately addresses potential health risks.

Sanitary Surveys are currently underway at all saltwater beaches throughout the State. HEALTH plans to finish with all surveys by the end of 2008. As surveys are completed, data collected is analyzed and used to determine what changes, if any, need to be made to sample location, frequency, etc. at a particular beach. **Appendix B** includes a copy of the sanitary survey form currently used by HEALTH.

In addition to sanitary surveys, which are conducted a minimum of every five years; beach samplers are given a daily survey form to complete at each beach during each sampling event. A copy of this form can be found in **Appendix C**. The data on this form is entered on a daily basis into our database system. This survey form provides further information on beach conditions, thereby increasing monitoring effectiveness.

3.1.4 Water Quality Evaluations

HEALTH conducted sampling during the 2002 bathing season to evaluate water quality at all of Rhode Island's saltwater licensed beaches. Water quality samples were collected from all 69 licensed saltwater beaches and tested for both Fecal Coliform and Enterococci. All sampling was conducted consistent with HEALTH's EPA approved Quality Assurance Project Plan. A more thorough description of HEALTH's monitoring strategy can be found in Section 3.0 (Tiered Monitoring Plan) of this document. HEALTH continuously evaluates water quality conditions at all licensed facilities. Since 2002, some licensed beaches have closed and/or opened. As beaches change their status, the water quality is evaluated at each new facility in order to determine the appropriate Tier Classification and associated public health risk.

3.1.5 Change in Classification

Sample results are reviewed annually to determine if a change in classification is needed. If sample results show an increased frequency of violations, an increase in the number of closure days, or a general deterioration of water quality in the area, the bathing area may require an increase in sampling effort. In addition, if water quality has improved and known/suspected sources of bacterial contamination have been eliminated, a less stringent sample schedule may be implemented. HEALTH will determine if a change in classification is considered necessary, either an increase or decrease in monitoring effort. EPA will be notified of the change electronically.

Furthermore, Sanitary Surveys will be conducted on all licensed saltwater beaches at least every five (5) years. A comprehensive evaluation of conditions at saltwater bathing beaches in Rhode Island will be conducted at this time. Surveys will allow HEALTH to evaluate program advancement toward minimizing the risk to bathers and the elimination of known or potential sources of contamination. An increase or decrease of water quality standard violations, closures, and general degradation/improvements in water quality will be documented.

3.2 Tiered Monitoring Plan (Criterion 2)

To develop a tiered monitoring plan HEALTH had to identify the following factors: the period and extent of use, the frequency of monitoring needed, the location of monitoring, the methods to be used, and assessment procedures for short term increases in pathogen indicators.

3.2.1 Period and Extent of Recreational Use

Rhode Island's bathing season generally runs from two weeks before Memorial Day to two weeks after Labor Day. The time of heaviest usage at bathing facilities is between July 4th and Labor Day. At some facilities, user populations swell to over 10,000 users per day⁹. According to the Rhode Island Economic Development Corporation, tourism is one of Rhode Island's fastest growing industries with an estimated 15.7 million visitors in 2000.¹⁰ It should be noted that surfing and other water activities are common at many of Rhode Island beaches, and these activities continue throughout the entire year.

3.2.2 Frequency of Monitoring

Sampling of recreational beaches occurs two weeks before Memorial Day and concludes two weeks after Labor Day. Sample frequencies were established upon completion of the extensive Beach Surveys, both the Review of Existing Information and the Field Sanitary Survey. Sample frequencies, according to risk classification, will be as follows; Tier I will be sampled at a minimum weekly frequency, Tier II bathing areas will be sampled at a minimum monthly frequency, and Tier III bathing areas will be sampled at a minimum bi-yearly frequency. These sample frequencies may be increased if HEALTH determines a more stringent sample schedule is appropriate. An increased monitoring effort will be required if known or potential sources of pollution have been documented, HEALTH will determine if the minimum sample schedule does not adequately protect public health.

If testing results violate the recreational water quality standard for Enterococci during the bathing season, the bathing area will be sampled daily until indicator organism levels fall within acceptable limits. Furthermore, if the bathing area is not already classified as high risk, it will be tested on a Tier I risk level for four (4) weeks. If after four weeks test results do not show additional violations of Rhode Island's water quality standards, the bathing area will revert to its original sample schedule. If sample results reveal further violations of the standard, the bathing area will remain on a Tier I sample schedule for the remainder of the bathing season and the risk classification will be reevaluated at the end of the season.

⁹ HEALTH Beach Facility Questionnaire, 1999 Bathing Season.

¹⁰ "Tourism: Rhode Island's 2nd Largest and Fastest Growing Industry"
<http://www.visitrhodeisland.com/toolbar/industry/industry.html>

3.2.3 *Location of Monitoring*

All licensed saltwater beaches will be monitored for Enterococci. The number of samples collected on a beach is dependent on the length of coastline and the presence of physical barriers to circulation (jetties, groins, etc.). Furthermore, streams and pipes will be sampled as needed (wet weather events, investigations, etc).

Beaches that are less than 300 linear feet of shoreline are required to take a minimum of one sample. If only one sample is collected, it is taken from the center of that bathing area. Beaches that are between 300 and 700 linear feet of shoreline are required to take a minimum of two water samples. Samples are collected with approximately equal distances between stations and the ends of the beach. Beaches that are greater than 700 linear feet of shoreline require a minimum of three water samples. Samples are collected with approximately equal distances between stations and the ends of the beach.

3.2.4 *Methods*

To assess the presence of harmful levels of pathogen indicators in Rhode Island’s bathing waters, HEALTH will use the IDEXX Enterolert™ method for the enumeration of Enterococci. Through an EMPACT project, HEALTH was able to evaluate the EPA Method 1600 (M-1600) and the Enterolert™ method. Based on HEALTH’s findings, the EPA M-1600 was less sensitive; often producing false negatives, and required an additional 24-hour validation period to provide accurate results.¹¹ Because of these factors, HEALTH has questioned M-1600 reliability as a “real-time” indicator. Enterolert™ provides HEALTH a range of Enterococci from <10 to >24,192.

3.2.5 *Assessment Procedures for Short-term Increases*

Assessment procedures for short-term increases in pathogen indicators in recreational waters are found in Table 1. If HEALTH’s assessment procedures do not identify the source of pollution; RIDEM, through a Memorandum of Agreement (MOA), will assist in the identification and elimination of pollution sources.

Table 1. Assessment Procedures for Short Term Increases

Type of Pollution	Assessment Procedures
Point Source of Pollution (storm water run-off point, pipe, etc.)	<ol style="list-style-type: none"> 1. Sample discharge, end of pipe, etc. 2. Bracket point source. Radiate from point source in 50 foot increments 3. Close area affected by pollution 4. Identify any “up-stream” sources of pollution through a sanitary survey. 5. If a sanitary survey does not reveal pollution source, contact RIDEM for assistance.

¹¹ “Bacterial Water Quality Monitoring at Upper Narragansett Bay Bathing Beaches.” Davis and Freestone; Rhode Island Department of Health, May 2001.

Type of Pollution	Assessment Procedures
Unknown Source of Pollution	<ol style="list-style-type: none"> 1. Close affected area of bathing beach. 2. Perform a sanitary survey to identify possible sources of pollutants. 3. If a sanitary survey does not reveal pollution source, contact RIDEM for assistance.

3.3 Monitoring Report Submission (Criterion 3)

As required by Criterion 3 of the Performance Manual, HEALTH provides the public and EPA all monitoring data. The public has access to all monitoring data through HEALTH’s beach monitoring website (www.ribeaches.org). The website is updated daily to provide the public real-time beach water quality information. EPA can also access data through the public website and are given a year data report of all sample result findings.

3.4 Methods and Assessment Procedures (Criterion 4)

Methods to be used and assessment procedures were developed through the tiered monitoring plan.

3.4.1 Methods

To assess the presence of harmful levels of pathogen indicators in Rhode Island’s bathing waters, HEALTH will use the IDEXX Enterolert™ method for the enumeration of Enterococci. Through an EMPACT project, HEALTH was able to evaluate the EPA Method 1600 (M-1600) and the Enterolert™ method. Based on HEALTH’s findings, the EPA M-1600 was less sensitive; often producing false negatives, and required an additional 24-hour validation period to provide accurate results.¹² Because of these factors, HEALTH has questioned M-1600 reliability as a “real-time” indicator. Enterolert™ provides HEALTH a range of Enterococci from <10 to >24,192.

3.4.2 Assessment Procedures

Assessment procedures for short-term increases in pathogen indicators in recreational waters are found in Table 1 (above). If HEALTH’s assessment procedures do not identify the source of pollution; RIDEM, through a Memorandum of Agreement (MOA), will assist in the identification and elimination of pollution sources.

3.5 Public Notification and Risk Communication Plan (Criterion 5)

HEALTH’s public notification plan includes a beach flagging/signage system, a 24-hour telephone hotline, a website, and a press release. The purpose of this plan is to quickly notify the public of potential risk associated with swimming in contaminated bathing waters. These notification procedures are detailed in Sections 7.0, 8.0 and 9.0.

¹² “Bacterial Water Quality Monitoring at Upper Narragansett Bay Bathing Beaches.” Davis and Freestone; Rhode Island Department of Health, May 2001.

3.6 Measures to Notify EPA and Local Governments/Beach Managers (Criterion 6)

EPA will be notified of all beach closures and openings through HEALTH's web-based management system. Every time a beach is opened/closed a press releases will be emailed to HEALTH Region 1 contact. Furthermore, EPA will receive an end of season report of all violations and closures/openings during that year's bathing season.

Beach managers will be notified immediately by telephone and emailed/faxed a press release after the decision to close a beach is made. The beach manager/operator will inform bathers, post any signs, raise a closure flag, or perform any other duties necessary to inform beach users that the bathing area does not currently meet water quality standards. Beach managers and the locally affected government will receive a faxed press release prior to general distribution of the closure notice.

3.7 Measures to Notify the Public (Criterion 7)

HEALTH has employed several methods to notify the public of beach closures; including a 24-hour telephone hotline, a daily updated website, a flagging system at several beaches, and a standard formatted press release. All notification methods are employed for each beach closure.

3.7.1 24-Hour Telephone Hotline (401.222.2751)

HEALTH set up a 24-hour telephone hotline so that the public can call anytime to find out about beach closures and advisories. The hotline is updated as needed, but typically daily during the summer months. A typical script for HEALTH's 24-hour telephone hotline can be found below.

"Hello, you have reached the Rhode Island Department of Health's Bathing Beaches Hotline. The following licensed beaches are closed due to high bacteria levels... (list beaches). Also, there are... (number of advisories) advisories in effect. An advisory has been issued for Upper Narragansett Bay. The Department of Health discourages swimming and other full body contact activities north of Conimicut Point. These waters are directly affected by pollution inputs due to heavy rains and discharges from area wastewater treatment facilities. Water contact should be avoided for a minimum of three days after heavy rainfall. For more information please contact us at 222-2749 or visit our website at www.ribeaches.org. If this is an after hours emergency please call 272-5952."

3.7.2 Beach Monitoring Website (www.ribeaches.org)

HEALTH initially created a Beach Monitoring website through an EPA EMPACT grant in 2000. This website has been updated to include current sample data and additional beach related information. The website lists all beach water quality data collected during the bathing season and contains a current list of closures and advisories. The Beach Monitoring website has been expanded to include maps of licensed bathing beaches and sample stations. Over the past year, HEALTH has worked with Garrison Enterprises (the Beach Program Database Contractor and Website Manager) to develop the maps as part of Google's™ mapping system. The public can therefore click on a map for any beach, see where samples are collected and zoom in and out as desired using either a street map, an aerial photograph or a hybrid. Also, being offered since the 2005-bathing season is the RIBeach Watch service, which allows the public to sign up and receive email notifications whenever a sample or closure/opening event occurs at their favorite beach. **Appendix D** shows the www.ribeaches.org homepage for the beach program.

3.7.3 Beach Flagging/Signage System

HEALTH also created a beach flagging system through the EMPACT Program. The flagging system was found to be most effective, by beach managers, to notify the public of the open/closed status of their facility. Currently the northern most Tier I beaches in Narragansett Bay (Conimicut Point, City Park, Oakland Beach, Goddard Park, Barrington Town Beach, Warren Town Beach, and Bristol Town Beach) have the blue (open) and red (closed) beach flags. If funds permit, HEALTH would like to expand the flagging system to all Tier I beaches.

In addition to the flags at several beaches, all licensed bathing areas are required to have signs of adequate size to inform users that the facility is closed due to high levels of bacteria. A standard format beach closure sign has been developed and required language will be provided to beach managers/operators as needed.

3.7.4 Standard Format Press Release

During the 2001 bathing season, HEALTH developed a standard press release for beach openings/closures; these procedures were updated in April of 2003. The Beach Program Administrator will distribute the press release to Rhode Island's 22 major media outlets; which include television, newspapers, and radio stations. The standard format press release is distributed within 30 minutes of a beach closure.

3.8 Notification Report Data Submission Plan (Criterion 8)

The BEACH Program requires HEALTH to submit all beach monitoring and notification data to EPA. Currently, HEALTH submits information yearly through EPA's central data exchange (CDX). To collect and submit this information HEALTH has hired a contractor to manage a web-based data system. The following outlines the collection, storage, and transmission of beach monitoring information.

HEALTH, through our database, has created a BEACH run scheduling system based upon our Tiered Monitoring Plan. The system schedules sampling runs consistent with sample frequency and number outlined in the Tiered Monitoring Plan. Also, comprehensive real-time updates of all trip information, station visit information and field activity information are made to HEALTH'S beach database.

Water samples are delivered to the HEALTH Laboratories, consistent with handling and storage procedures outlined in HEALTH's QAPP. After the completion of the testing process, laboratory personnel complete electronic entry forms for each sample. These forms update the result and laboratory information in HEALTH's beach database. Samples are then reviewed by HEALTH staff to determine if any change in status is required (opening/closing). If a change in status is required, public notification procedures are followed. The database records all monitoring and notification data required by EPA. A four-stage process is undertaken prior to submission of data to EPA. First, the data is reviewed to ensure compliance with EPA requirements. Second, the data is normalized (if applicable). Third, the data is migrated into the EPA approved XML schema. Finally, the XML file undergoes conformance testing, and then is submitted to CDX.

As required by EPA, HEALTH maintains geographic information for all beaches and sample locations in Geographic Information System. This information has already been sent to EPA and updates will be provided as required. Additional information is collect through RI's Beach GIS

system such as stormwater runoff points, discharge pipes, etc. HEALTH is currently in the process of providing maps of all the licensed beaches through the website at www.ribeaches.org.

In addition to required information, HEALTH collects data in the following data: daily beach surveys, sanitary surveys, daily rainfall totals and one hour maximums, daily temperature information, and reported illness information.

All beach data resides in a web accessible, open database complaint relational database schema. The data structure allows for permission based on facility access and is stored in redundancy. The public is granted access to monitoring and beach status information through HEALTH's Beach Monitoring website. This site allows the public to search, query, and extract data for their use.

3.9 Public Evaluation of Program (Criterion 9)

HEALTH conducted two public comment periods for this program. First, EPA, DEM, and all licensed beach managers were given the opportunity to evaluate the sanitary survey procedures. Comments from this group were used to better classify risk at licensed bathing beaches in Rhode Island. Second, the public was given an opportunity to comment on the full monitoring and public notification plans. Notice was sent out to all licensed beaches, the HEALTH public hearing mailing list, and a general online notification for an informal public hearing. The informal public hearing was held at HEALTH and the public was given additional time to comment electronically or in writing. HEALTH plans to organize a workshop/meet-and-greet seminar in the near future in order to obtain public comments and suggestions on the existing program.

4.0 FLAGSHIP BEACHES

The USEPA defines flagship beaches as high-use beaches that were selected for targeted attention. HEALTH and the USEPA chose beaches for flagship designations based on three criteria: the beach had a history of closures; extended periods of poor water quality were recorded for that beach; and the beach served a diverse socioeconomic user group. During the 2002 season, Goddard Park in Warwick, Warren Town Beach in Warren, and King Park Swim Area in Newport were designated as Rhode Island's Flagship Beaches. However, due to the closure of King Park in 2004 by the City of Newport, Scarborough State Beach in Narragansett was designated as a flagship beach. The USEPA expects to see marked improvement in water quality and a reduction in flagship beach closures in the next five years. A detailed description of recent activities and a summary of improvement strategies at these beaches can be found in **Appendix E**. Note: This appendix also covers those beaches that have been identified as "priority beaches" by Governor Carcieri as discussed in Section 5.1.

5.0 2007 BEACH SEASON DATA SUMMARY

5.1 Sample Results

HEALTH’s Beach Program conducted sampling and monitoring activities under the USEPA BEACH Grant Program at all licensed saltwater beaches.

The total number of samples collected provides a benchmark, which indicates the level of public protection offered by the Beach Monitoring Program. The number of samples has increased, from 281 in 1995 to 1,718 in 2007. This number has decreased from 2006 since the program no longer tests for fecal coliform. The number of facilities tested has increased from 82 in 1997 to 119 in 2007, 69 of which are saltwater beaches. This number is constantly in flux due to the definition of “a beach”. Eliminating sampling exemptions for open ocean beaches accounts for the increase in the number of facilities monitored; however, several facilities have been eliminated because they no longer operate as a bathing beach.

The EPA does not currently fund freshwater beach sampling. Therefore, sampling at freshwater beach facilities in the State of Rhode Island is the responsibility of the beach manager, typically a town representative, or facility owner. HEALTH receives results from either the beach manager or directly from the laboratory.

5.2 Tier Classifications for 2007

As part of the performance criteria established by EPA, Rhode Island developed a tiered monitoring plan for licensed beaches throughout the State. The plan addresses the frequency and location of monitoring based on the periods of recreational use of the beach, the nature and extent of use during certain periods, the proximity of beach waters to known point sources and non-point sources of pollution, and any effect storm events may have on the beach waters. In general beaches classified as Tier I in Rhode Island are sampled at least once a week, Tier II beaches are sampled a minimum of once per month, and Tier III beaches are typically sampled less than once per month. The following tables illustrate the classification of each of Rhode Island’s beaches during the 2007 beach season:

Table 2. Tier Classification and Monitoring Frequency for Rhode Island Saltwater Beaches

Beach Name	County	Tier Classification	Monitoring Frequency
ATLANTIC BEACH CLUB BEACH	Newport County	I	4x/wk
BARRINGTON TOWN BEACH	Bristol County	I	10x/mo
BONNET SHORES BEACH CLUB	Washington County	I	2x/mo
BRISTOL TOWN BEACH	Bristol County	I	3x/wk
CAMP GROSVENOR	Washington County	I	3x/wk
CAMP ST. DOROTHY	Bristol County	I	1x/wk
CAPT ROGER WHEELER	Washington County	I	1x/wk
CITY PARK BEACH	Kent County	I	2x/mo

Beach Name	County	Tier Classification	Monitoring Frequency
CONIMICUT POINT BEACH	Kent County	I	3x/wk
EASTON'S BEACH	Newport County	I	2x/wk
FORT ADAMS STATE PARK	Newport County	I	3x/wk
GODDARD MEMORIAL STATE PARK	Kent County	I	3x/wk
MISQUAMICUT STATE BEACH	Washington County	I	2x/mo
NARRAGANSETT TOWN BEACH	Washington County	I	6x/yr
NORTH KINGSTOWN TOWN BEACH	Washington County	I	10x/mo
OAKLAND BEACH	Kent County	I	3x/wk
SCARBOROUGH STATE BEACH NORTH	Washington County	I	2x/wk
SCARBOROUGH STATE BEACH SOUTH	Washington County	I	2x/wk
THIRD BEACH	Newport County	I	3x/wk
WARREN TOWN BEACH	Bristol County	I	10x/mo
CAMP FULLER-YMCA BEACH	Washington County	II	2x/mo
DUNES CLUB	Washington County	II	2x/mo
FOGLAND BEACH	Newport County	II	2x/mo
MACKEREL COVE BEACH	Newport County	II	1x/mo
PEABODYS BEACH	Newport County	II	2x/mo
PLUM BEACH CLUB	Washington County	II	2x/mo
PULASKI STATE PARK BEACH	Providence County	II	1x/mo
SACHUEST BEACH	Newport County	II	2x/mo
SAUNDERSTOWN YACHT CLUB	Washington County	II	2x/mo
ALFIES	Washington County	II	1x/mo
ANDREA HOTEL	Washington County	II	1x/mo
ATLANTIC BEACH CASINO RESORT	Washington County	II	1x/mo
ATLANTIC BEACH PARK	Washington County	II	1x/mo
ATLANTIC PIZZA AND GRILL	Washington County	II	1x/mo
BLUE SHUTTERS BEACH	Washington County	II	1x/mo
BRIGGS BEACH	Newport County	II	1x/mo
CHARLESTOWN TOWN BEACH	Washington County	II	1x/mo

Beach Name	County	Tier Classification	Monitoring Frequency
DUNES PARK	Washington County	II	1x/mo
GALILEE BEACH CLUB ASSOCIAT	Washington County	II	1x/mo
GOOSEBERRY BEACH	Newport County	II	1x/mo
GOOSEWING BEACH	Newport County	II	1x/mo
GRINELLS BEACH	Newport County	II	2x/mo
HAZARDS BEACH	Newport County	II	1x/mo
JIMS TRAILER PARK	Washington County	II	1x/mo
MATUNUCK TOWN BEACH	Washington County	II	1x/mo
MISQUAMICUT CLUB	Washington County	II	1x/mo
MISQUAMICUT FIRE DISTRICT BEACH	Washington County	II	1x/mo
PADDY'S BEACH	Washington County	II	1x/mo
PLEASANT VIEW INN	Washington County	II	1x/mo
ROY CARPENTER'S BEACH	Washington County	II	1x/mo
SAM'S BEACH	Washington County	II	1x/mo
SANDY POINT BEACH	Newport County	II	2x/mo
SANDY SHORE MOTEL	Washington County	II	1x/mo
SEASIDE BEACH CLUB	Washington County	II	1x/mo
SOUTH SHORE BEACH	Newport County	II	1x/mo
SPOUTING ROCK BEACH ASSOCIATION	Newport County	II	1x/mo
WARRENS POINT BEACH CLUB	Newport County	II	1x/mo
WEEKAPAUG FIRE DISTRICT	Washington County	II	1x/mo
WESTERLY TOWN BEACH-NEW	Washington County	II	1x/mo
WESTERLY TOWN BEACH-OLD	Washington County	II	1x/mo
WILLOW DELL BEACH CLUB	Washington County	II	1x/mo
BALLARDS INN	Washington County	III	2x/yr
CAMP NARROW RIVER	Washington County	III	N.M.
CAPTAIN ZAKS RESTAURANT & GRILLE	Washington County	III	N.M.
CHARLESTOWN BREACHWAY	Washington County	III	2x/yr
EAST BEACH	Washington County	III	2x/yr

Beach Name	County	Tier Classification	Monitoring Frequency
EAST MATUNUCK STATE BEACH	Washington County	III	2x/yr
FRED BENSON TOWN BEACH	Washington County	III	2x/yr
KING PARK SWIM AREA	Newport County	III	N.M.
OCEAN HOUSE	Washington County	III	2x/yr
SALTY BRINE BEACH	Washington County	III	2x/yr
SURF HOTEL	Washington County	III	2x/yr
ANNAWAMSCUTT BEACH	Bristol County	III	N.M.
BAIA BEACH	Bristol County	III	N.M.
BARRINGTON UNNAMED #1	Bristol County	III	N.M.
BARRINGTON UNNAMED #2	Bristol County	III	N.M.
BARRINGTON UNNAMED #3	Bristol County	III	N.M.
BARRINGTON UNNAMED #4	Bristol County	III	N.M.
BLOCK ISLAND UNNAMED #1	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #10	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #11	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #12	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #2	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #3	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #4	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #5	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #6	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #7	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #8	Washington County	III	N.M.
BLOCK ISLAND UNNAMED #9	Washington County	III	N.M.
BOLD POINT	Providence County	III	N.M.
BRISTOL UNNAMED #1	Bristol County	III	N.M.
BRISTOL UNNAMED #2	Bristol County	III	N.M.
BROWNING BEACH	Washington County	III	N.M.
BULLOCKS NECK	Providence County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
BUTTONWOODS BEACH	Kent County	III	N.M.
CAFE PASTURE BEACH	Washington County	III	N.M.
CAMP CROSBY	Bristol County	III	N.M.
CEDAR TREE POINT	Kent County	III	N.M.
CHARLESTOWN BEACH	Washington County	III	N.M.
CHARLESTOWN UNNAMED #1	Washington County	III	N.M.
CHARLESTOWN UNNAMED #2	Washington County	III	N.M.
CHEPIWANOXET	Kent County	III	N.M.
COLE FARM BEACH	Kent County	III	N.M.
COLLINS BEACH	Newport County	III	N.M.
CONIMICUT POINT NORTH	Kent County	III	N.M.
CRANSTON UNNAMED #1	Providence County	III	N.M.
CRANSTON UNNAMED #2	Providence County	III	N.M.
CRESCENT BEACH	Providence County	III	N.M.
DEEP HOLE BEACH	Washington County	III	N.M.
EAST PROVIDENCE UNNAMED #1	Providence County	III	N.M.
EAST PROVIDENCE UNNAMED #2	Providence County	III	N.M.
FORT GETTY	Newport County	III	N.M.
FORT WEATHERILL	Newport County	III	N.M.
GASPEE POINT	Kent County	III	N.M.
GREEN HILL BEACH	Washington County	III	N.M.
HOPEWORTH BEACH	Bristol County	III	N.M.
ISLAND PARK	Newport County	III	N.M.
JAMESTOWN UNNAMED #1	Newport County	III	N.M.
JAMESTOWN UNNAMED #2	Newport County	III	N.M.
JAMESTOWN UNNAMED #3	Newport County	III	N.M.
JAMESTOWN UNNAMED #4	Newport County	III	N.M.
JUNIPER BEACH	Bristol County	III	N.M.
KELLY BEACH	Washington County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
KINGS BEACH	Newport County	III	N.M.
LATHAM PARK	Bristol County	III	N.M.
LITTLE COMPTON UNNAMED #1	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #10	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #11	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #2	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #3	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #4	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #5	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #6	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #7	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #8	Newport County	III	N.M.
LITTLE COMPTON UNNAMED #9	Newport County	III	N.M.
LONGMEADOW	Kent County	III	N.M.
MCCORRIE POINT	Newport County	III	N.M.
MIDDLETOWN UNNAMED #1	Newport County	III	N.M.
MIDDLETOWN UNNAMED #2	Newport County	III	N.M.
MILL COVE BEACH	Kent County	III	N.M.
MOONSTONE BEACH	Washington County	III	N.M.
NAPA TREE POINT BEACH	Washington County	III	N.M.
NARRAGANSETT UNNAMED #1	Washington County	III	N.M.
NARRAGANSETT UNNAMED #10	Washington County	III	N.M.
NARRAGANSETT UNNAMED #11	Washington County	III	N.M.
NARRAGANSETT UNNAMED #3	Washington County	III	N.M.
NARRAGANSETT UNNAMED #4	Washington County	III	N.M.
NARRAGANSETT UNNAMED #5	Washington County	III	N.M.
NARRAGANSETT UNNAMED #6	Washington County	III	N.M.
NARRAGANSETT UNNAMED #7	Washington County	III	N.M.
NARRAGANSETT UNNAMED #8	Washington County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
NARRAGANSETT UNNAMED #9	Washington County	III	N.M.
NARRAGANSETT UNNAMED #2	Washington County	III	N.M.
NEWPORT UNNAMED #1	Newport County	III	N.M.
NEWPORT UNNAMED #2	Newport County	III	N.M.
NORTH KINGSTOWN UNNAMED #1	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #10	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #11	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #12	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #13	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #2	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #3	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #4	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #5	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #6	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #7	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #8	Washington County	III	N.M.
NORTH KINGSTOWN UNNAMED #9	Washington County	III	N.M.
PATIENCE ISLAND UNNAMED #1	Newport County	III	N.M.
PORTSMOUTH UNNAMED #1	Newport County	III	N.M.
PORTSMOUTH UNNAMED #10	Newport County	III	N.M.
PORTSMOUTH UNNAMED #11	Newport County	III	N.M.
PORTSMOUTH UNNAMED #12	Newport County	III	N.M.
PORTSMOUTH UNNAMED #13	Newport County	III	N.M.
PORTSMOUTH UNNAMED #14	Newport County	III	N.M.
PORTSMOUTH UNNAMED #2	Newport County	III	N.M.
PORTSMOUTH UNNAMED #3	Newport County	III	N.M.
PORTSMOUTH UNNAMED #4	Newport County	III	N.M.
PORTSMOUTH UNNAMED #5	Newport County	III	N.M.
PORTSMOUTH UNNAMED #6	Newport County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
PORTSMOUTH UNNAMED #7	Newport County	III	N.M.
PORTSMOUTH UNNAMED #8	Newport County	III	N.M.
PORTSMOUTH UNNAMED #9	Newport County	III	N.M.
POTOWOMUT	Kent County	III	N.M.
PRUDENCE ISLAND UNNAMED #1	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #10	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #11	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #2	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #3	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #4	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #5	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #6	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #7	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #8	Newport County	III	N.M.
PRUDENCE ISLAND UNNAMED #9	Newport County	III	N.M.
QUONOCOTAUG BEACH	Washington County	III	N.M.
ROCKY BEACH	Newport County	III	N.M.
ROCKY POINT	Kent County	III	N.M.
RUGGLES BEACH	Newport County	III	N.M.
RUMSTICK POINT	Bristol County	III	N.M.
SABINS POINT	Providence County	III	N.M.
SAPOWET BEACH	Newport County	III	N.M.
SEASIDE BEACH	Newport County	III	N.M.
SOUTH KINGSTOWN UNNAMED #1	Washington County	III	N.M.
SOUTH KINGSTOWN UNNAMED #2	Washington County	III	N.M.
SOUTH KINGSTOWN UNNAMED #3	Washington County	III	N.M.
SOUTH KINGSTOWN UNNAMED #4	Washington County	III	N.M.
SOUTH KINGSTOWN UNNAMED #5	Washington County	III	N.M.
TEDDYS BEACH	Newport County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
TIVERTON UNNAMED #1	Newport County	III	N.M.
TIVERTON UNNAMED #10	Newport County	III	N.M.
TIVERTON UNNAMED #11	Newport County	III	N.M.
TIVERTON UNNAMED #12	Newport County	III	N.M.
TIVERTON UNNAMED #2	Newport County	III	N.M.
TIVERTON UNNAMED #3	Newport County	III	N.M.
TIVERTON UNNAMED #4	Newport County	III	N.M.
TIVERTON UNNAMED #5	Newport County	III	N.M.
TIVERTON UNNAMED #6	Newport County	III	N.M.
TIVERTON UNNAMED #7	Newport County	III	N.M.
TIVERTON UNNAMED #8	Newport County	III	N.M.
TIVERTON UNNAMED #9	Newport County	III	N.M.
TOUISSET BEACH	Bristol County	III	N.M.
TRUSTOM BEACH	Washington County	III	N.M.
WARREN UNNAMED #1	Bristol County	III	N.M.
WARREN UNNAMED #2	Bristol County	III	N.M.
WARWICK UNNAMED #1	Kent County	III	N.M.
WARWICK UNNAMED #2	Kent County	III	N.M.
WEST BEACH	Newport County	III	N.M.
WESTERLY UNAMED # 1	Washington County	III	N.M.
WESTERLY UNAMED # 2	Washington County	III	N.M.
WESTERLY UNAMED # 3	Washington County	III	N.M.
WESTERLY UNAMED # 4	Washington County	III	N.M.
WESTQUAGE BEACH	Washington County	III	N.M.

N.M. - Not Monitored

Table 3. Tier Classification and Monitoring Frequency for Rhode Island Freshwater Beaches

Beach Name	County	Tier Classification	Monitoring Frequency
GORTON POND BEACH	Kent County	I	1x/wk
KENT COUNTY YMCA	Kent County	I	1x/wk
LINCOLN WOODS STATE PARK BEACH	Providence County	I	1x/wk
WORLD WAR II MEMORIAL STATE PARK BEACH	Providence County	I	1x/wk
AQUAPAUG SCOUT RESERVATION	Washington County	II	1x/mo
BEACH POND BEACH	Washington County	II	1x/mo
BOWDISH LAKE CAMPGROUND	Providence County	II	1x/mo
BRIAR POINT BEACH	Kent County	II	1x/mo
BROWNING MILL POND BEACH	Washington County	II	1x/mo
BUCK HILL CAMPGROUND	Providence County	II	1x/mo
BURLINGAME STATE PARK CAMPGROUND	Washington County	II	1x/mo
BURLINGAME STATE PARK PICNIC AREA	Washington County	II	1x/mo
CAMP ALDERSGATE	Providence County	II	1x/mo
CAMP CANONICUS	Washington County	II	1x/mo
CAMP COOKIE	Providence County	II	1x/mo
CAMP DAVIS	Washington County	II	1x/mo
CAMP HOFFMAN	Washington County	II	1x/mo
CAMP MASSASOIT	Providence County	II	2x/mo
CAMP MEEHAN	Providence County	II	1x/mo
CAMP NOKEWA	Washington County	II	1x/mo
CAMP RUGGLES	Providence County	II	1x/mo
CAMP SHEPARD	Providence County	II	1x/mo
CAMP WATCHAUG	Washington County	II	1x/mo
CAMP WATCHAUG WOHELO	Washington County	II	1x/mo
CAMP WATMOUGH	Providence County	II	1x/mo
COLWELL'S CAMPGROUND	Kent County	II	1x/mo
DIFONZO RECREATION AREA	Providence County	II	1x/mo

Beach Name	County	Tier Classification	Monitoring Frequency
DYER WOODS NUDIST CAMPGROUND	Providence County	II	1x/mo
ECHO LAKE CAMPS	Providence County	II	1x/mo
EPISCOPAL CONFERENCE CENTER BEACH	Providence County	II	1x/mo
GEORGE WASHINGTON CAMPGROUND	Providence County	II	1x/mo
GEORGIAVILLE POND BEACH	Providence County	II	1x/mo
GINNY-B CAMPGROUND BEACH	Providence County	II	1x/mo
GLOCESTER COUNTRY CLUB BEACH	Providence County	II	1x/mo
GOVERNOR NOTTE PARK BEACH	Providence County	II	1x/mo
HARMONY HILL SCHOOL	Providence County	II	1x/mo
HOLIDAY ACRES CAMPGROUND	Providence County	II	1x/mo
HOPE COMMUNITY SERVICES BEACH	Providence County	II	1x/mo
KINGSTONS CAMP	Washington County	II	1x/mo
LARKIN'S POND BEACH	Washington County	II	1x/mo
MARION IRONS BEACH	Providence County	II	1x/mo
MATER SPEI DAY CAMP	Providence County	II	1x/mo
NINIGRET PARK BEACH	Washington County	II	2x/mo
PASTORE LEISURE CENTER-LADD SCHOOL CAMP	Washington County	II	1x/mo
PULASKI STATE PARK BEACH	Providence County	II	1x/mo
SLACK'S POND BEACH	Providence County	II	1x/mo
SPRING LAKE BEACH	Providence County	II	1x/mo
W ALTON JONES BEACH	Kent County	II	1x/mo
WESTWOOD YMCA BEACH	Kent County	II	1x/mo
YAWGOOG SCOUT RESERVATION	Washington County	II	1x/mo
BREEZY LAKE BEACH	Kent County	III	N.M.
CAMP AYOHO	Kent County	III	N.M.
LITTLE BEACH	Washington County	III	N.M.
LITTLE POND BEACH	Kent County	III	N.M.
SAND POND BEACH	Kent County	III	N.M.

Beach Name	County	Tier Classification	Monitoring Frequency
WHISPERING PINES CAMPGROUND	Washington County	III	N.M.
WORDEN POND FAMILY CAMPGROUND BEACH	Washington County	III	N.M.

N.M. - Not Monitored

Table 4. Summary of Tier Classifications

Classification	Number of Freshwater Beaches	Number of Saltwater Beaches
Tier I	4	20
Tier II	46	41
Tier III	7	174

5.3 Closures

There were 43-recorded closures totaling 96 closure days during the 2007 season. This represents a 72% decrease in closure days from the 2006-bathing season (there were 91 closures totaling 351 closure days in 2006). Even though significant rainfall (>.50" in a 24-hour period from June 1-August 31 at the TF Green) only rose from 5 instances in 2006 to 6 instances in 2007, overall rainfall decreased 43% from 14.65" in 2006 to 8.28" in 2007¹³. Based on historical data, a direct connection between rainfall and beach closures is evident.

In addition, the USEPA BEACH grants allow HEALTH to more comprehensively study areas where water quality exceeds the bacterial standard. For example: because of known bacteria issues in the upper regions of the Narragansett Bay, areas located north of Prudence Island were sampled several times weekly during the 2007 bathing season. Intensive sampling allowed HEALTH to precisely define areas of higher bacteria concentrations in an effort to more easily delineate bacterial sources. Enhanced monitoring activities further protect public health; however, they also have resulted in an increase in the number of beach closures. It should be noted that closure data is based on federally funded saltwater beach sampling *and* privately funded freshwater beach sampling. Table 5 summarizes 2007 closure days at each beach.

Table 5. 2007 Beach Closures

Beach Name	Days Closed	Problems
Atlantic Beach Club	8	Stormwater, Pump station, Newport CSO?
Barrington Town Beach	6	Run-off, Providence CSO?
Bristol Town Beach	6	Run-off, Wildlife, Providence CSO?
Camp Grosvenor	2	Run-off, Wildlife
City Park	3	Run-off, Boats, Wildlife

¹³ <http://www.erh.noaa.gov/box/dailystns.shtml> NOAA Northeast Environmental Climate Data website

Beach Name	Days Closed	Problems
Conimicut Point	3	Providence CSO?, Wildlife, Run-off
Dyer Woods Nudist Campground	1	Run-off, Wildlife
Easton's Beach	4	Stormwater, Pump station, Newport CSO?
Ginny B. Campground	12	Run-off, Wildlife
Goddard Park	1	Run-off, Boats, Wildlife
Governor Notte Park	2	Wildlife
Harmony Hill School	3	Run-off, Wildlife
Hope Community Services Beach	4	Run-off, Wildlife
Kent County YMCA	2	Run-off, Wildlife
Ninigret Park	1	Run-off, wildlife
North Kingstown Town Beach	6	Run-off, Boats
Oakland Beach	7	Run-off, Wildlife
Plum Beach Club	1	Stormwater
Scarborough State Beach - North	3	Stormwater Run-off
Scarborough State Beach - South	3	Stormwater Run-off
Third Beach	1	Run-off, Boats
W. Alton Jones	1	Wildlife
Warren Town Beach	15	Run-off, Boats
WWII Memorial Park Beach	1	Run-off, Wildlife
Total:	96	

The following tables and charts document the percentage of closures attributed to each town. Note: all saltwater closure days occurred within ten of Rhode Island's coastal towns and all freshwater closure days occurred within six of Rhode Island's towns.

Table 6. Percentage of Saltwater Beach Closure Days By Town for the 2007 Bathing Season

Percentage of Total Saltwater Closure Days	City/Town	Number of Closure Days	Facilities Closed
22	Warren	15	Warren Town Beach

Percentage of Total Saltwater Closure Days	City/Town	Number of Closure Days	Facilities Closed
20	Warwick	14	City Park Beach, Conimicut Point Beach, Goddard State Park Beach, Oakland Beach
13	Middletown	9	Atlantic Beach Club Beach, Third Beach
13	North Kingstown	9	Camp Grosvenor Beach, North Kingstown Town Beach, Plum Beach Club Beach
9	Barrington	6	Barrington Town Beach
9	Bristol	6	Bristol Town Beach
9	Narragansett	6	Scarborough State Beach North, Scarborough State Beach South
6	Newport	4	Easton's Beach
100		69	

Chart 6a. Saltwater Beach Closure Days By Town for the 2007 Bathing Season

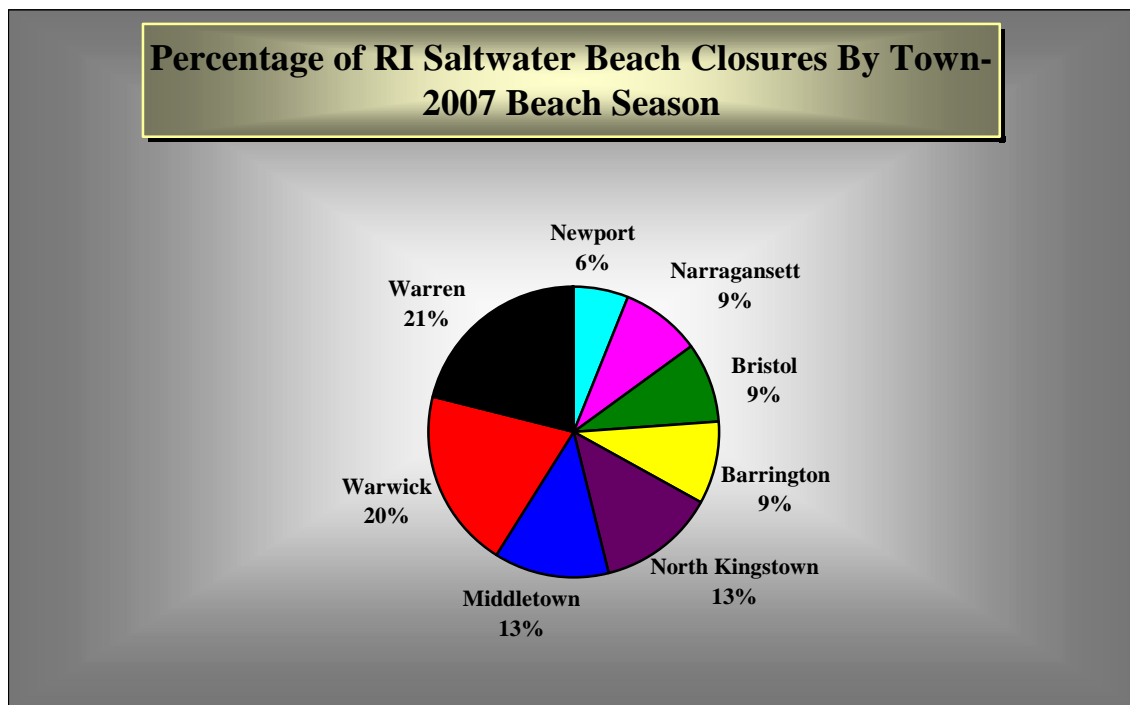


Table 7. Percentage of Freshwater Beach Closure Days By Town for the 2007 Bathing Season

Percentage of Total Freshwater Closure Days	City/Town	Number of Closure Days	Facilities Closed
48	Foster	13	Ginny B. Campground, Dyer Woods Nudist Campground

Percentage of Total Freshwater Closure Days	City/Town	Number of Closure Days	Facilities Closed
15	Scituate	4	Hope Community Services Beach
11	Chepachet	3	Harmony Hill School
7	North Providence	2	Governor Notte Park
7	Warwick	2	Kent County YMCA
4	West Greenwich	1	W. Alton Jones
4	Charlestown	1	Ninigret Pond
4	Woonsocket	1	World War II Memorial Park Beach
100		27	

Chart 7a. Freshwater Beach Closure Days By Town for the 2007 Bathing Season

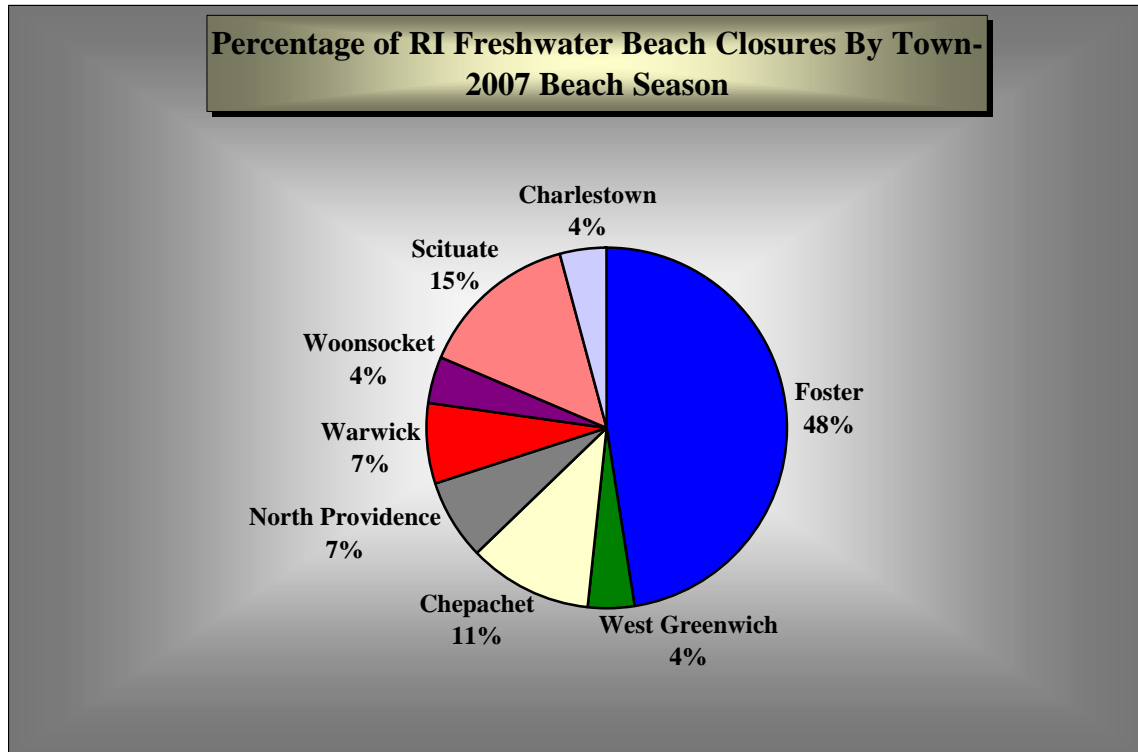


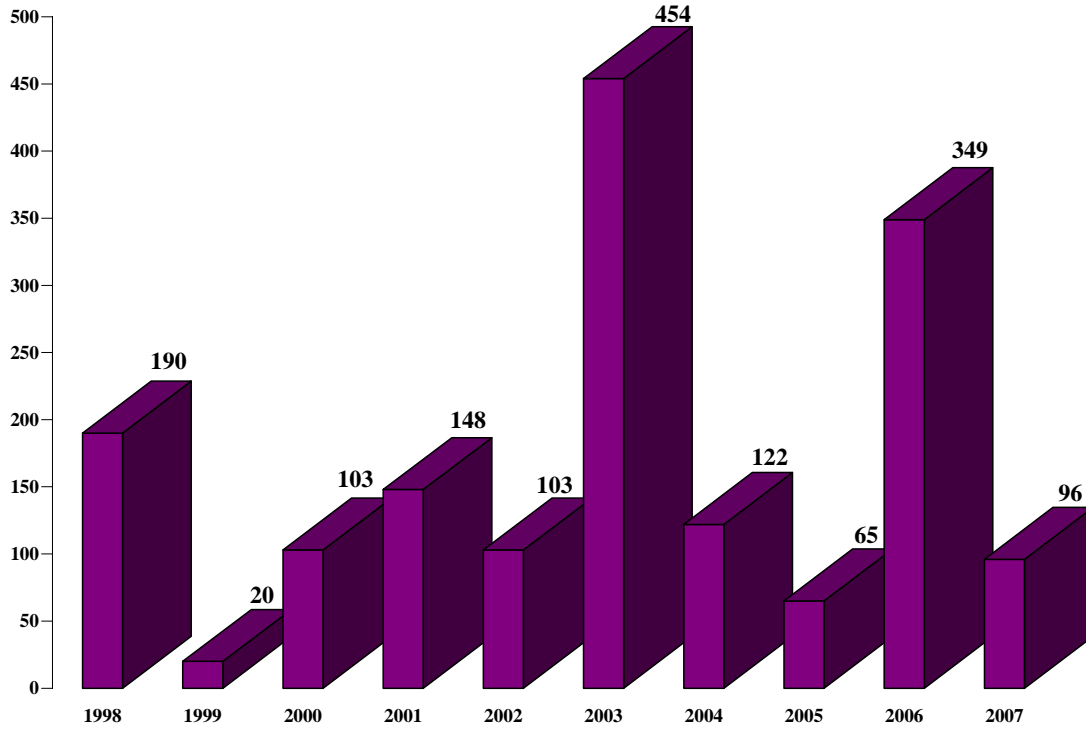
Table 8. Summary and Evaluation of Trends (2000-2007) in Regards to Rainfall and Sampling Data

	2000	2001	2002	2003	2004	2005	2006	2007
Number of Licensed Freshwater Beaches	51	51	49	51	47	50	53	50
Number of Licensed Saltwater Beaches	31	31	70	72	71	69	69	69
Total Number of Licensed Beaches	82	82	119	123	118	119	122	119
Sample Count* (RIDOH - EPA Funded Sampling Only)	515	976	1,779	2,567	2,701	3,211	2,769	1,718
Rainfall Total - As recorded at TF Green between June 1st and Aug 31st (inches)	Not Recorded	13.3	5.67	14.96	10.99	6.24	14.65	8.28
Significant Rain Events (>0.5" in 24-hr)	4	7	5	11	9	4	5	6
Closure Events	13	26	27	67	41	30	91	43
Closure Days	103	148	103	459	122	65	351	96

* Sample count estimates do not include approximately 1,000 samples submitted by Beach Operators on an annual basis, which are reviewed by RIDOH.

Chart 8a. Closure Data Trends (1998-2007)

Rhode Island Beach Closure Days 1998-2007



A table detailing beach closure days for each beach, from 1998 to 2007, is included in **Appendix F**.

6.0 SPECIAL STUDIES/SUCCESS STORIES

6.1 Governor's Priority Beaches

During the summer of 2003, the environmental health of Narragansett Bay was questioned because of several unfortunate events. In particular, Rhode Islanders experienced the highest number of recorded beach closures and Greenwich Bay experienced the worst fish kill in the State in the last 50 years. In response to these events, Governor Carcieri formed the Governor's Narragansett Bay and Watershed Planning Commission to coordinate and plan for the environmental and economic health of the Bay. Ten study panels were formed with experts from state and federal government, academia, non-governmental organizations, private firms and the public.

In March of 2004, the Commission issued a report detailing recommendations to improve the health of Narragansett Bay. On July 22, 2004, Governor Carcieri responded to the report, charging HEALTH, Department of Environmental Management (DEM) and the Department of Transportation (DOT) with developing an improvement strategy for 10 priority beaches. In December 2004, HEALTH, DEM and DOT issued the *Joint Improvement Strategy for 10 Priority Beaches* report outlining the next steps to be taken to identify and correct pollution problems at 10 priority beaches. A table illustrating the issues facing the priority beaches and outlining improvement strategies currently in progress and/or planned at each of the priority beaches can be found in **Appendix E**.

6.2 Easton's and Atlantic Beach Club

During the 2007 beach season, Easton's Beach in Newport, Rhode Island was closed for 4 days and Atlantic Beach Club Beach in Middletown, Rhode Island (located adjacent to Easton's) was closed for 8 days. Compared to 12 closure days for Easton's Beach and 30 closure days at Atlantic Beach Club Beach in 2006, this represents a significant decrease. In the winter of 2007, the City of Newport granted money to a local Aquidneck Island volunteer organization, Clean Ocean Access (COA), to continue sampling Easton's Beach and Atlantic Beach Club Beach during the off-season when surfers utilize the beach area. This study is unique since HEALTH does not generally sample any of Rhode Island's beaches during the off-season (with the exception of short-term special studies). The City of Newport agreed to pay for sample analysis from January through May, and COA agreed to provide all necessary manpower.

COA's involvement parallels the sentiment of many citizens of Middletown and Newport to get involved with issues affecting the water they swim in. The City of Newport and Town of Middletown have also demonstrated a dedicated effort to work collectively towards methods to eradicate local water pollution problems. After petitioning the City of Newport, COA was able to convince Newport officials to support continued funding of these off-season sampling efforts as well as sampling year round through 2008 at several non-licensed swimming areas on Aquidneck Island. Sampling efforts by COA will be targeted towards after rain events.

HEALTH will continue to work with COA to provide support and technical assistance. HEALTH plans to conduct surveys at the non-licensed swimming areas being sampled by COA in order to reconsider these areas for sampling under the Beach Program. HEALTH will also supplement sampling efforts of COA as needed at some of these locations during the upcoming beach season.

6.3 Greenwich Bay

Beaches located in the City of Warwick have accounted for the largest percentage of closures by city/town over the last several years. From 2006 to 2007, closures in Warwick decreased dramatically from 89 to 16 closure days. A portion of this decrease can be attributed to the decreased rainfall in 2007. However, this significant decrease may also be attributed to the city of Warwick connecting over 4,000 homes to sewers throughout the city and around the beaches.

HEALTH is currently working with RIDEM to determine if combined sewer overflows (CSOs) in the upper bay may be contributing to beach closures at Conimicut Point. Additionally, RIDEM's Total Maximum Daily Load (TMDL) Program for Greenwich Bay details comprehensive management actions that will be taken, but their benefit will not be known for several years. In cooperation with the TMDL Program, the Coastal Resource Management Council's (CRMC's) Greenwich Bay Special Area Management Plan (SAMP) will focus on all aspects of pollution sources within the Greenwich Bay watershed.

As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches. All parties have met several times and are working to develop an action plan that will detail the next steps to be taken to continue improvement at Warwick's beaches and end beach closures at these facilities.

EPA's National Epidemiological and Environmental Assessment of Recreational (NEEAR) Water Study was conducted at Goddard State Park Beach from June 23rd through Labor Day on weekends and holidays during the 2007 beach season. The main goals of the study were to determine new ways of analyzing water samples to provide real-time water quality measurements (i.e. rapid 2-hour tests), and to help gain a better understanding between water pollution, swimming at the beach, and peoples' health (through interviews regarding illness, exposure, etc.). Representatives from EPA, the Center for Disease Control (CDC) and Westat (EPA's contractor) conducted interviews of beach goers and collected water samples throughout the beach season. Results should be ready for viewing by late spring of 2008.

The NEEAR Study website, <http://www.epa.gov/nheerl/near>, provides more in-depth information. This study drew more attention to the water quality within Greenwich Bay, and particularly at Goddard State Park Beach, which is a very popular summer destination for Rhode Islanders.

7.0 FUTURE ACTIVITIES

7.1 Geographic Information Systems (GIS)

GIS has improved monitoring efficiency and accuracy; the system has assisted in identifying known sources of pollution and is assisting in the development of a beach closure model based on rainfall. The Beach Monitoring Program staff feels strongly that GIS capabilities will continue to greatly improve the ability to protect the public from swimming in contaminated bathing waters. Additionally, HEALTH has been utilizing GIS capabilities to update the beaches database. HEALTH is in the process of generating GIS data for each of the saltwater and freshwater beaches licensed in Rhode Island. Surveys are currently underway of all saltwater beaches and will be utilized to revise and improve the GIS saltwater database. Additionally, HEALTH plans to reevaluate beaches that are currently not licensed and not monitored in order to determine if some of these beaches should actually be part of the beach monitoring program (i.e. beaches utilized regularly by the public and/or beaches with potential for health risks).

7.2 Web Based Data/Public Notification System

HEALTH has developed a web-based management system to manage all beach related data and perform statistical analysis. This system provides the public with sample data, open/closed status, and general beach information. Public notification procedures have been streamlined and are conducted at the touch of a button from any computer with an Internet connection. A 24 hour telephone hotline, website, and a pre-approved list of media outlets is notified instantaneously after the decision to close a beach has been made. This system also allows HEALTH to transmit beach related data, as required under the BEACH Act, with incredible ease. The alternative to this system is the entering of data into the USEPA's current system STORET. Press releases are now issued in a much more timely manner, and staff time is not wasted traveling to the HEALTH's Cannon Building to conduct after hours notifications. HEALTH will continue to perfect this system. **Appendix D** includes the homepage for HEALTH's Beach Monitoring Program.

7.3 Web Based Data/Laboratory Results and Sample Schedule Integration

As discussed above, HEALTH has developed a web-based management system to manage all beach related data. HEALTH is continuing to improve this system by developing an automated sampling schedule system. Sample schedules will be entered into the system on a daily basis. All sample submittal forms and sample container labels will be generated through the sample scheduler. This system will save valuable time spent by the interns. Additionally, the system will soon be updated to allow results received from the laboratory to be sent directly to the web-based management system upon approval from the beach program manager. Therefore, interns will be spending less time on data entry and their time can be spent on more useful tasks. HEALTH will continue to work with our database manager to adapt the system in order to improve its capabilities.

7.4 Improved Freshwater Beach Monitoring

The EPA does not currently fund freshwater beach sampling. Therefore, sampling at freshwater beach facilities in the State of Rhode Island is the responsibility of the beach manager, typically a town representative, or facility owner. HEALTH receives results from either the beach manager or directly from the laboratory. To date, freshwater beach sampling has been sporadic. Results have not been submitted to HEALTH on a timely basis, and in some instances, not at all. As

stated in Section 5.1, freshwater beach surveys were conducted at Rhode Island's 50 licensed freshwater facilities. Additionally, HEALTH found several beach facilities operating without a license. HEALTH plans to develop a complete GIS database of surveyed beaches, and plans to initiate a tracking system in order to measure freshwater facilities compliance with applicable monitoring schedules.

7.5 Predictive Modeling

During the 2007 season, HEALTH began to utilize predictive measures at Scarborough State Beach and Easton's Beach in Rhode Island that tend to have high closure rates. Since sampling has increased steadily over the past several years, there is more data available to create these models. Comparing past results to such variables as rainfall and observed wildlife/boat activity has also created useful data that can be incorporated. Currently, the turn around time for sampling results is 24 hours. Due to this fact, HEALTH's goal is to utilize past data to create a system that will dictate appropriate closing/opening measures in a more timely manner to ensure better public health. However, the development of predictive models is dependent upon large sample data sets, and therefore there is a definite need for further collection of samples after rain events, etc. and continued development of models.

HEALTH is currently in the process of reviewing all data that has been inputted into the beach database to ensure quality of reported results. Upon completion of the data evaluation, HEALTH plans to assess rainfall and sample data for beaches with chronic closures in order to look for trends that may help in the development of closure protocols for each beach.

7.6 Marketing Internship

HEALTH will be assisted in a program evaluation by a marketing intern. The objective of the internship is to assist the Beach Program in more efficiently serving the needs of the public and providing a higher level of customer satisfaction and service to beach owners. Extensive research is needed to track the program's performance in providing effective monitoring information and helpful support throughout the summer season to beach owners and to the public. Data mining techniques will be used to analyze the internal and external factors contributing to the effectiveness of the program and ways in which the program can improve.

The Beach Monitoring Program services a wide array of beach clients throughout the year. Beach owners must be divided by a simple classification system to allow for a better understanding of their needs. An improved classification between these owners and managers can allow the program to satisfy beach specific needs and aid the program in determining ways to improve individual relations with various beach owners and managers. The intern will help develop a classification system to divide beach owners and managers by classification and need for the purposes of better relating beach monitoring and support.

Many Rhode Islanders are unaware of beach closures until they reach their beach destination. The aim of the program is to better inform the public on ways to find up-to-date beach closure information. In addition, HEALTH would like to increase the public's understanding of the program by providing information on sources of beach contamination and the public's role in contributing to a clean environment by updating the program's interactive website. The intern will assess the public relations of the program to determine the best ways to promote awareness of Beach Program and the beach closure system.

As one initiative to help increase awareness of the program, HEALTH would like the intern to help in the development of a standardized sign to advertise the program. The advertisement should include all HEALTH logos, be placed in an effective viewing area, direct users to the main website, and educate the public of the services offered through the site and the program. This will inform beach goers that the bathing facility is actively monitored by the Department of Health, advertise the program, and familiarize the public with the Beach Monitoring Program.

Appendix A

Rules and Regulations for Licensing of Recreational Facilities

**RULES AND REGULATIONS FOR
LICENSING OF RECREATIONAL FACILITIES**

[R23-21-RF]

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

DEPARTMENT OF HEALTH

May 1980

AS AMENDED

June 1983

**January 2002 (re-filing in accordance with
the provisions of section 42-35-4.1 of the
Rhode Island General Laws, as amended)**

These amended rules and regulations are promulgated pursuant to the authority conferred under sections 23-1-5, 23-1-17 and 23-21-4 of the General Laws of Rhode Island of 1956, as amended, and are established for the purpose of defining the minimal standards for recreational facilities consistent with statutory provisions.

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PART A DEFINITIONS AND ADMINISTRATION

Section 1.0 DEFINITIONS

Wherever used in these rules and regulations the following terms shall be construed as follows:

- 1.1 "Adequate" shall mean that which is needed to accomplish the intended purpose in keeping with good public health practice.
- 1.2 "Amusement Place" shall mean any tract of land together with the structures located thereon, the principle use of which is to provide a "midway" of amusement, or animal or vehicle racing for public amusement or recreation.
- 1.3 "Bathing" shall mean swimming and the related activities connected thereto.
- 1.4 "Bathing Beach" shall mean any natural area or tract of land which is used in connection with swimming and/or bathing in any waters of the state provided:
 - (a) It is open to the public by permit and/or payment of a fee; or
 - (b) It is maintained as a private club or association requiring membership fee or dues; or
 - (c) It is maintained with or without charge for the recreation of groups of ten (10) or more children.
- 1.5 "Department" shall mean Rhode Island Department of Health.
- 1.6 "Director" shall mean the Director of the Rhode Island Department of Health or his duly authorized agents.
- 1.7 "Drainage Unit" shall mean a pit filled with crushed stone for soil absorption of potable water overflow at drinking facilities or watering stations.
- 1.8 "Family Camp" shall mean any place maintained to accommodate tents, mobile camping units, trailers, recreation vehicles, etc., in which separate sites are provided or made available for individuals, families or other groups of similar size. Service buildings may or may not be provided.
 - (a) "Primitive Family Camp" shall mean a place provided to accommodate camping with or without tents and/or shelters. Such places are usually **NOT** accessible to automobiles and/or recreation vehicles. A primitive family camp is a site at which basic needs for camp operation such as buildings, water supply systems, toilets, lavatories, showers and cooking facilities are **NOT** usually provided.
 - (b) "Caravan, Safari, Rally" shall mean an affiliated group of recreational vehicles assembled for a short term camping experience.
- 1.9 "Family Campsite" shall mean a portion of land in a camping area for the placement of a recreational vehicle and/or tent for the exclusive use of its occupants.
- 1.10 "Garbage" shall mean the putrescible animal and vegetable wastes that result from the handling, preparation and consumption of food.

- 1.11 "Hotel, Motel, Motor Court, Inn, Tourist Cabins" shall mean any building or group of buildings with six or more rooms, or accommodations for more than eight individuals, used for temporary occupancy for lodging or sleeping and further provided they are served by a private or non-community water supply or individual sewage disposal system.
- 1.12 "Mobile Home" shall mean a prefabricated, one-family dwelling unit, to which temporary wheels can be attached for transportation to a permanent location or foundation. Mobile homes are excluded from the provisions of these regulations.
- 1.13 "Operator" shall refer to any person who:
- (a) Alone or jointly or severally with others owns an establishment covered in these regulations; or
 - (b) Has care, charge or control of an establishment as agent or lessee of the owner or as an independent contractor.
- 1.14 "Person" will be held to mean any individual, firm, co-partnership, association or private or municipal corporation.
- 1.15 "Plastic Waste Insert" shall mean any liner which consists of a non-dissolvable material used as a convenience for the collection and disposal of refuse and human waste; e.g., liners for portable "Jonny" camp units, can liners, etc.
- 1.16 "Potable Water" shall mean water free from impurities present in amounts sufficient to cause disease or harmful physiological effects and conforming in its bacteriological, radiological and chemical quality to the requirement of the Rhode Island Department of Health Public Drinking Water Regulations.
- 1.17 "Primitive or Outpost Youth/Adult Camp" shall mean a camp or other site at which the basic needs such as places of abode, water supply systems and permanent toilet and cooking facilities are not usually provided.
- 1.18 "Recreation Facility" shall mean to include but not be limited to hotels, motels, motor courts or inns, tourist cabins establishments, camping areas, amusement places, bathing beaches, mobile recreational vehicle facilities and parks.
- 1.19 "Recreational Vehicle" shall mean a vehicle which may or may not be motor propelled, that is used primarily for recreation purposes on land. It includes motor homes, travel trailers, "pop-top" trailers, fold-out trailers, vans and other similar vehicles primarily designed for camping or overnight occupancy.
- (a) "Dependent Recreational Vehicle" shall mean a vehicle which has no permanent toilet, lavatory and shower facilities and is dependent upon a service building for toilet, lavatory and shower facilities.
 - (b) "Independent or Self-Contained Recreational Vehicle" shall mean a vehicle which can operate independent of connections to sewer, water and electric systems. It may contain a water-flushed toilet, lavatory, bath, shower and kitchen sink, all of which are connected to water storage and sewage holding tanks located within the vehicle.

- 1.20 "Refuse" shall mean all putrescible and non-putrescible solid wastes including garbage, rubbish, ashes and biological wastes.
- 1.21 "Rubbish" shall mean all non-putrescible solid wastes consisting of both combustible and non-combustible materials such as paper, tin cans, glass bottles, bedding, rags, crockery, metals, etc.
- 1.22 "Sanitary Station (Dump Station)" shall mean a facility used for receiving and disposing of wastes from various types of holding tanks.
- 1.23 "Sanitary Sewage" shall mean any human or animal excremental liquid or substance including the discharge of water closets, laundry tubs, washing machines, sinks, dishwashers and the contents of septic tanks, cesspools or privies. Waste water from dishwashing procedures, handwashing, bathing and shower facilities will be considered sewage.
- 1.24 "Service Building" shall mean a structure housing toilets, lavatories, showers and such other facilities as may be required.
- 1.25 "Shall or Must" shall be used to state mandatory requirements.
- 1.26 "Should or May" shall be used to state recommended or advisory procedures or equipment.
- 1.27 "Travel Trailer" shall mean a vehicular, portable structure built on a chassis with permanent wheels for the purpose of towing from place to place as a temporary residence for travel, recreation or vacation use.
- 1.28 "Watering Station" shall mean a centralized potable water supply outlet.
- 1.29 "Youth/Adult Camp" shall mean any camp, primitive or outpost camp, or residential camp which conducts a program for 10 or more campers.
 - (a) "Day Camp" - A camp operated for less than 24 hours in any one day not including day care centers as defined in section 23-28.1-5 of the General Laws. Day campers will be limited to two overnight programs per week.
 - (b) "Residential Camp" shall mean a camp which provides overnight facilities.

Section 2.0 ADMINISTRATION

- 2.1 **ISSUANCE AND EXPIRATION OF LICENSE** - No person shall maintain within this state any recreation facility or use as defined in Section 1.0 until such person shall have obtained a license therefore from the department in accordance with the requirements of section 2 of Chapter 23-21 of the General Laws of Rhode Island of 1956, as amended. Licenses are not transferable. All licenses must be prominently displayed at the licensed location.
- 2.2 **LICENSE APPLICATION** - The initial application for a license must be on forms provided. A detailed plan drawn to scale showing the entire site, location and layout of buildings, recreational vehicle sites, complete details of water supplies, pumps and service including well logs, sewage and refuse disposal units, bathing areas and all available unit sites must be approved by the Director prior to any construction and before any license can be issued. Plans and construction must comply with

all applicable existing laws and regulations. Additions or alterations subsequent to the submission of such will be made only with the approval of the Director.

- 2.3 **SUSPENSION OR REVOCATION OF LICENSE** - The Director may suspend or revoke any license for violation of the provisions of Chapter 23-21 of the Rhode Island General Laws or these regulations. The provisions of section 3 of Chapter 23-21 shall apply.
- 2.4 **VARIANCES** - In the event of special situations or unusual conditions, the Director may grant variances to these regulations. Requests for variances will be submitted in writing and detail to the licensing authority.
- 2.5 **RETROACTIVITY** - Recreational facilities licensed by the Department prior to 10 June 1980, the effective date of these rules and regulations, may be deemed acceptable with respect to said design and construction if they are capable of being maintained in a sanitary condition that protects the public health.
- 2.6 **PENALTY FOR VIOLATIONS** - Any person who violates the foregoing regulations shall be subject to the provisions of section 8 of Chapter 23-21 of the General Laws of Rhode Island of 1956, as amended, entitled Licensing of Recreational Facilities.
- 2.7 **SEVERABILITY** - If any provision of these regulations or the application thereof to any facility or circumstance shall be held invalid, such invalidity shall not affect the provisions or application of the regulations which can be given effect, and to this end the provisions of the regulations are declared to be severable.

PART B GENERAL REQUIREMENTS

Section 3.0 ANIMALS AND PETS

- (a) No owner or person in charge of a dog, cat or other pet animal shall permit it to run at large or to commit any nuisance within the limits of any recreational facility under these regulations. Any kennels, pens or other areas provided for such pets shall be maintained in a sanitary condition at all times.
- (b) The applicable provisions of Title 4, entitled Animal Health of the General Laws of Rhode Island of 1956, as amended, shall apply where applicable.
- (c) Horses and other farm animals must be stabled at least five hundred (500) feet away from living quarters, dining halls and kitchens in order to minimize odor and nuisance problems. Temporary shelters, corrals, tie rails or hitching posts shall not be located within two hundred (200) feet of any dining hall or other place where food is prepared, cooked or served. Stables must have cleanable floors properly drained and maintained. Drainage from stables and temporary quarters shall not contaminate any spring, stream, lake or other water drainage. All manure must be removed, stored or disposed of in a manner that prevents insect breeding.

Section 4.0 REPORTING OF COMMUNICABLE DISEASE

- 4.1 Cases of communicable disease designated as "reportable diseases" by the Director of Health shall be reported promptly to the Rhode Island Department of Health in accordance with the "Regulations

Pertaining to Reporting of Communicable Disease" of the Rhode Island Department of Health.

- (a) When infectious diseases present a potential hazard or occur in epidemic form in campers, these shall be reported to the Rhode Island Department of Health, even if not designated as "reportable diseases".

Section 5.0 CURTAILMENT OF UTILITIES OR SERVICES

- 5.1 No person shall cause the water, or sewage disposal, service facility or equipment which is required to be made available under these minimum standards to be shut off or removed except for such temporary period as may be necessary during actual repairs or alterations or during temporary emergencies when curtailment of service is approved by the Director.

Section 6.0 ELECTRICAL DISTRIBUTION SYSTEM

- 6.1 Electrical wiring system provided shall consist of approved fixtures, equipment and appurtenances installed and maintained in accordance with the State Building Code.

Section 7.0 FOOD SERVICE

- 7.1 All food operations will comply with the requirements of Chapters 23-1, 21-27 and 21-31 of the General Laws of 1956, as amended, and the regulations adopted thereunder.

Section 8.0 LAUNDRY FACILITIES

- (a) If laundry facilities are provided in a recreational facility, there must be a separate room or building set aside for the use of washing machines and this use confined to the inhabitants of that recreational facility;
- (b) All laundry rooms will have floors that are impervious to water, easily cleaned and sloped to floor drains connected to the sewerage disposal system. The floors will be maintained in a sanitary condition at all times. Walls and partitions in laundries will be constructed of easily cleanable and impervious material;
- (c) Laundries will have 40 foot candles of lighting and be properly ventilated.

Section 9.0 PEST CONTROL

- (a) Grounds, buildings, parking areas, and structures must be maintained reasonably free of insect and rodent infestation and harborages;
- (b) Extermination methods and other measures to control pests must conform with requirements of the Department of Environmental Management where applicable or as approved by the Director.

Section 10.0 REFUSE STORAGE AND DISPOSAL

- (a) The operator shall provide an adequate storage area and maintain, in a clean and sanitary condition, as many receptacles for the storage of garbage and rubbish as are necessary to contain the accumulation between collections. Garbage and rubbish should be disposed of at

least twice weekly;

- (b) Garbage must be stored in fly-tight, water-tight, rodent-proof receptacles of metal or other durable material and properly covered;
- (c) The storage, collection and disposal of refuse must be so conducted as to create no health hazards, rodent harborage, insect breeding areas, accident or fire hazards or air pollution;
- (d) When garbage and rubbish is to be disposed of on the grounds, disposal must be approved by the Director of Environmental Management and shall be in accordance with Chapter 46, Title 23.

Section 11.0 SEPTIC TANK CLEANERS

11.1 Any establishment under these regulations that has apparatus for the removal of septage or sanitary sewage must comply with the provisions of Chapter 23-49, Rhode Island General Laws of 1956, as amended.

Section 12.0 SEWAGE DISPOSAL FACILITIES

- (a) Sewage must be disposed of in accordance with rules and regulations adopted under the authority of section 42-17.1-2(L), (M) and (R) of the Public Laws of 1978, Chapter 131, section 6;
- (b) Primitive or outpost camps will utilize methods approved by the Director.

Section 13.0 SWIMMING POOLS AND BATHING BEACHES

- (a) Where a swimming pool is provided, it will be constructed and operated in accordance with Chapter 23-22 of the General Laws of 1956, as amended, and all state regulations applicable;
- (b) Bathing beach water must meet bacteriological and safety standards as determined by the department, or the Department of Environmental Management.

Section 14.0 TOILETS, LAVATORIES AND SHOWERS

- (a) Each recreational facility will provide the number of toilets, showers or lavatories or fraction thereof as cited in Tables HIV of the appendix, and such facilities will be maintained clean, sanitary, well-lighted and in good repair;
- (b) Handwashing facilities will be adjacent to toilet facilities and urinals;
- (c) Potable hot and cold running water will be provided at all showers and lavatories unless a variance has been granted;
- (d) Approved hand cleaner and approved hand drying facilities will be provided at all lavatories unless a variance has been granted;
- (e) Proper ventilation will be provided;
- (f) 40 foot candles of light will be provided unless otherwise exempted;

- (g) Duckboards will not be used in showers.

Section 15.0 WATER SUPPLY

- (a) The operator of all recreational facilities will supply potable water, under pressure, adequate for the needs of such facility. The water supply must be obtained from a source approved in writing by the Department and so distributed as to be readily available. If there is more than one well serving the recreational facility, each well must be visually, readily identifiable by name, number, color or some other means on or about the well;
- (b) The operator shall install and maintain all pipes and pumps delivering potable water in accordance with the State Building Code;
- (c) There must be no physical connection between any pipe carrying water from a potable water source and any pipe carrying water from any other source without written approval of the Director;
- (d) Drinking fountains shall be of a design meeting the following general criteria based on the National Plumbing Code, 1955 revision and installed in accordance with the State Building Code:
 - (1) The fountain shall be constructed of an impervious material and have an easily cleanable bowl and other surfaces;
 - (2) The jet of water must be at an angle preventing water from falling back into the orifice;
 - (3) The end of the nozzle must be protected by guards preventing the person using the fountain from contacting the nozzle;
 - (4) The nozzle must discharge above the edge of the bowl so an air gap is provided to prevent a possible cross-connection;
 - (5) Proper drainage must be provided to carry off water promptly.

PART C SPECIAL REQUIREMENTS

SUBSECTION I

Section 16.0 YOUTH/ADULT CAMPS

- 16.1 Toilets, Urinals and Privies - (1) Non-water carried sewage disposal systems such as pit privies, latrines and urinals may not be less than 100 feet from a kitchen or food service area; (2) Residential camps shall provide handwashing and shower facilities and will meet the minimum requirements as cited in Table II; (3) Sleeping areas shall not be more than 200 feet from a toilet or urinal nor less than 50 feet from any non-water carried toilets and/or urinals.
- 16.2 Handwashing and Showers, Etc. - (1) Handwashing and shower facilities shall be supplied with sufficient warm and cold running water; (2) Showers or bathtubs, when provided, must be in the living quarters or in a centrally located structure; (3) Handwashing facilities, shower stalls, bathtub areas and dressing compartments must be maintained in a clean and sanitary condition; (4) Day camps are not required to provide shower facilities; however, they must meet the requirements cited

in Table III; (5) Primitive or outpost camps are exempt from handwashing and shower facility requirements, as shown in Tables II and III.

- 16.3 Primitive (Outpost) Requirements - Basic standards of sanitation relative to waste and sewage disposal, water supply, lavatory, bathing facilities and food sanitation apply to all primitive camping including but not limited to the following: (1) Counselors must be trained in the basic principles of food protection and sanitation and a list of trained personnel certified by the director of camping for the particular organization shall be available; (2) Each individual shall have available approved clean, fresh water for lavatory needs; (3) Warm water and adequate facilities shall be available for handwashing; (4) Adequate facilities shall be provided for approved methods of sanitizing eating and drinking utensils; (5) slit trenches or "cat hole" disposal of human excreta or other recognized methods of sewage disposal must be provided.

SUBSECTION II

Section 17.0 FAMILY CAMPS

- 17.1 Waste Disposal - (1) One recreational vehicle sanitary station (dump station) with a foot-operated seal cover, or equivalent, providing sanitary closure of the sewer pipe inlet when not in use shall be provided for each 150 family campsites; (2) When potable water is supplied to an individual campsite, an approved means of sewage collection and/or disposal must be provided.
- 17.2 Potable Water Supply - A potable watering station must be provided for supplying recreational vehicle storage tanks. All necessary procedures must be taken to assure the safety of the water supply. A watering station must be at least fifty (50) feet away from a sanitary station. A sign at least two (2) feet by two (2) feet must be posted at each potable water station stating, in proportional lettering, "POTABLE WATER. NOT TO BE USED FOR FLUSHING WASTE TANKS".
- 17.3 Service Building - A central service building containing all necessary toilet and other required plumbing facilities must be provided for all recreational vehicle parking areas, except those reserved exclusively for independent recreational vehicles. Service buildings shall be located convenient to the parking spaces, but in no case more than five hundred (500) feet away. (See Table IV for required plumbing facilities.)
- 17.4 Primitive Camps - Basic standards of sanitation relative to waste and sewage disposal apply. Campers are responsible for using safe water for drinking and culinary purposes.
- 17.5 A Camping Caravan - Safari - Rally may be accommodated in an area maintained and licensed as a recreational facility provided adequate facilities are present to accommodate the types of recreational vehicles or tents involved. A camping caravan - safari - rally may be held on land not maintained as a recreational facility if prior approval is obtained from the Department of Health. Approved, adequate facilities must be readily available for good personal hygienic and public health protection. Approvals are limited to a three (3) day period.

APPENDIX

PLUMBING FIXTURE REQUIREMENTS

Table I

Motels, Hotels, Cabins, Amusement Places, Bathing Beaches

Facility	Toilets	Urinals	Handwashing Facilities	Bathtubs or Showers
Motels, Hotels, Cabins, etc	1*	-	1*	1*
Amusement Places and Bathing Beaches	1/500 Male 1/500 Female	1/500 Male	1/500 Male 1/500 Female	-

*Per dwelling unit

Table II

Youth - Residential Camps

Number Served	Boys		Girls	Boys or Girls	
	Toilets	Urinals	Toilets	Handwashing Facilities	Bathtubs or Showers
1-10	1	-	1	1	1
11-18	1	1	2	2	2
19-33	2	1	2	3	2
34-48	2	2	3	3	3
49-63	3	2	4	4	4
64-79	3	3	5	4	5
80-95	4	3	6	5	6

Table III

Youth - Day Camps

Facilities	Boys	Girls
Toilets*	1/60	1/35
Urinals*	1/60	-
Handwashing*	1/33	1/33

*Per number of individuals served

Table IV

Family Camps

Number of Sites	Toilets		Urinals	Handwashing Facilities		Showers		Other (a)
	Men	Women	Men	Men	Women	Men	Women	
1-30	2	2	1	2	2	1	1	1
31-45	2	2	1	3	3	1	1	1
46-60	2	3	2	3	3	2	2	1
61-80	3	4	2	4	4	2	2	1
81-100	3	4	2	4	4	3	3	1
100+ (b)								

- (a) A flushing toilet (without seat) shall be provided, at each service building, for disposal of liquid wastes unless a sanitary station is conveniently accessible.
- (b) For recreational vehicle areas having more than 100 sites there shall be provided 1 additional toilet and lavatory, for each sex, for each additional 30 sites; 1 additional shower, for each sex, for each additional 40 sites; and 1 additional men's urinal for each additional 100 sites.

Appendix B

Sanitary Survey Form



**Rhode Island Department of Health
Beach Monitoring Program**



BEACH NAME:

DATE OF SURVEY:

Beach Contact Information

Narrative

Beach Monitoring Activities

Closure History (Last 5-years)



Rhode Island Department of Health Beach Monitoring Program



BEACH NAME:

DATE SURVEY COMPLETED:

Is beach area marked (i.e. roped off, etc.)? Describe.	
Lat/Long of ends of beach area (N/S or E/W boundaries)	
Length of swimming area	
Lat/Long of Sample Stations	
Length of entire beach	
Location of stormwater run-off points? Describe and/or get lat/long	
Comments	



Rhode Island Department of Health Beach Monitoring Program



BEACH NAME:

DATE SURVEY COMPLETED:

Beach History and Known Sources of Contamination:

Does the Beach meet its use classification?	YES/NO (if no, high risk)					
303d Listed?	YES/NO (add 1 point per impairment)					
Confirmed Illness Reports?	YES/NO (if yes, add 5 points)					
Closed during the 2006 Bathing Season?	1-5days 1 Point	6-10days 2 Points	11-15days 3 Points	16-20days 4 Points	21-25days 5 Points	26-30days 6 Points
Closed during the 2005 Bathing Season?	1-5days 1 Point	6-10days 2 Points	16-20days 4 Points	21-25days 5 Points	26-30days 6 Points	31-35days 7 Points
Is the beach located in an UA or DPA?	YES/NO (if yes, add 10 points)					
Number of PS Discharges within a 5 mile radius?	(1 point per discharge)					
Is the area subject to CSO's or SSO's?	YES/NO (if yes, add 25 points)					
Is the area subject to Agricultural run-off?	YES/NO					
The nearest POTW is _____miles away?	0-1 mile 15 points	1-2 miles 10 points	2-3 miles 5 points	3-4 miles 3 points	4-5 miles 1 point	
Number of POTW's within 5 miles?	(1 point per POTW)					
Level of Private Septic Systems?	High 10 points		Medium 5 points		Low 1 point	
Is there a TMDL in progress?	YES/NO (if yes, subtract 5 points)					
Ave. # of times the single sample standard was violated?	(1 point per exceedance)					
How important is this beach to the local economy?	High 10 points		Medium 5 points		Low 1 point	
Number of Marine Pump-Outs within 5 miles?	(Subtract 1 point per facility)					

Field Survey:

Sanitary facilities located at Beach?	YES/NO (if no, add 5 points)		
Number of Marinas to likely have an effect on the beach?	(1 point per marina)		
Level of boat traffic?	High 10 points	Medium 5 points	Low 1 point
Wild animals present on/near beach?	YES/NO (if yes, add 5 points)		
Domestic animals on/near beach?	YES/NO (if yes, add 5 points)		
Approx. # of Birds on a typical 100ft. section of beach?	(.25 points per bird)		

Ave. # of users during peak beach season?	1-500 5 points	501-1500 10 points	1500-5000 15 points	5001-10000 20 points	>10001 25 points	
Ave # of off-peak users (primary contact)?	1-25 1 point	26-50 5 points		>50 10 points		
Density of susceptible population?	0-33% 5 points	34-67% 10 points		68-100% 15 points		
Visible stormwater run-off?	YES/NO (if yes, 5 points per occurrence)					
Pipes at/adjacent to beach?	YES/NO (if yes, pipe <12"-1 point, >12"-2 points)					
Presence of floatable debris?	YES/NO (if yes, add 5 points)					
Presence of scum/oil sheen?	YES/NO (if yes, add 5 points)					

General Information:

Length of beach			
Location of pipes?			
Location of sampling points?			
Location of stormwater run-off points?			
Distance to stream/river?			
Wrack present?	YES/NO	Width:	Do they rake? YES/NO

Grand Total:	
--------------	--

Comments:

Appendix C

Daily Survey Form

Bathing Beach Daily Survey

Name of Beach: _____

Date: _____ Time: _____ Water Temp: _____

Weather Conditions:

Sunny & Clear _____ Cloudy & Overcast _____ Rainy _____ Foggy _____ Windy _____

Tidal Conditions:

Slow _____ Moderate _____ High _____ High Tide _____ Low Tide _____

Activity on Beach:

Approx.# of People _____ Adults _____ Children _____

Swimming _____ Sunbathing _____ Fishing _____ Boating _____ Walking _____ Other _____

Conditions of the Beach:

Overall Appearance _____ Debris on Beach _____ Debris in Water _____

Vegetation in Water: 1 2 3 4 5
 <25% 25% 50% 75% 100% Cover in 1 meter quadrat

Vegetation on Shore: 1 2 3 4 5
 <25% 25% 50% 75% 100% Cover in 1 meter quadrat

Width of Wrack on shore (in meters) _____

Visible sewage or sewage odor _____

Conditions of Water:

Clear _____ Cloudy & Murky _____ Oily Film _____

Sources of Pollution:

Waterfowl Approx.#-Seagulls _____ Ducks _____ Geese _____ Swans _____

Approx. # of Boats _____

Wind and Weather Conditions:

Additional Comments:

Appendix D

Homepage for HEALTH's Beach Monitoring Program



Rhode Island Department of Health

DAVID R. GIFFORD, M.D., MPH, DIRECTOR
DONALD L. CARGIERI, GOVERNOR

www.health.ri.gov



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Beach Monitoring Home

Beach Water Quality Monitoring

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Fact Sheets for Beach Goers

Illness Complaint Form

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RIBeach Watch Login

Content Syndication

The purpose of the Rhode Island Department of Health Beach Monitoring Program is to provide real-time water quality and safety information concerning all 118 licensed bathing facilities. Through effective management of these beaches, the Department of Health can minimize public health risks associated with swimming in contaminated waters.

For information regarding Recent Beach Closures and/or Openings please see the "RECENT BEACH CLOSURES" section in the right-hand menu. Alternatively you can use the "SEARCH BEACH RESULTS" feature on the right-hand menu to search for a specific beach by beach name or by town to see a full water quality monitoring history for that beach.

- [Recent Closures and Advisories](#)
- [Recent Press Releases](#)
- [Fact Sheets for Beach Goers](#)

If you have any questions, comments or suggestions for the Bathing Beaches Monitoring Program website, please contact us at: ribeaches@doh.state.ri.us

Bathing Beaches Monitoring Program
3 Capitol Hill, Room 203
Providence, RI 02908-5097
(401) 222-2749
Bonnie Blair - Beach Coordinator
bonnie.blair@health.ri.gov

For questions or comments on the Bathing Beaches Monitoring Program site, please e-mail RIBeaches@health.ri.gov

SEARCH BEACH RESULTS

Any Beach

Select a Beach or Select a Town

Any Town

Search Click Search

BEACH SEARCH TIPS

Select a Beach or Town to search. When complete you will be presented with an alphabetical list of all beaches that match your search criteria.

RECENT PRESS RELEASES

- No Recent Press Releases Available.
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RECENT BEACH CLOSURES

- No Recent Beach Closures Available.
- [More ...](#)



Appendix E

Status of Flagship Beaches and Governor's Priority Beaches

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEMS/IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
Barrington Town Beach	Bay Road, Barrington	Wildlife/Birds, Potential CSO/SSO Impacts	Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Conduct a comprehensive site assessment to identify storm water impacts and any correctable sources of pollution. Refocus sampling efforts in the Upper Narragansett Bay to study the contrast between existing offshore data and existing bathing beach data.	HEALTH began a comprehensive survey of the beach area in the fall of 2006 to study stormwater impacts to the beach area. HEALTH has met with RIDEM and NBC to discuss and coordinate wet weather sampling activities at Barrington. HEALTH is planning to collect beach samples while NBC collects offshore samples in the vicinity of the beach during a four-day wet weather event. HEALTH, RIDEM and NBC are ready to mobilize when weather cooperates.
Bristol Town Beach	Asylum Road, Bristol	Stormwater, Wildlife/Birds, Potential CSO/SSO Impacts	Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Conduct a comprehensive site assessment to identify storm water impacts and any correctable sources of pollution. Determine the source of high bacteria in the wetland swale, which discharges to the beach. Refocus sampling efforts in the Upper Narragansett Bay to study the contrast between existing offshore data and existing bathing beach data.	HEALTH conducted a comprehensive survey with RIDEM in the summer of 2006 to study stormwater impacts to the beach area. HEALTH has met with RIDEM and NBC to discuss and coordinate wet weather sampling activities at Bristol. RIDEM will collect beach samples while NBC collects offshore samples in the vicinity of the beach during a four-day wet weather event. HEALTH, RIDEM and NBC are ready to mobilize when weather cooperates.
City Park Beach	Asylum Road, Warwick	Stormwater, Boater Discharge, Wildlife/Birds	Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Implement Greenwich Bay Total Maximum Daily Load (TMDL) water quality restoration plan and the Special Area Management Plan (SAMP). Implement the State's "No Discharge Law".	<p>Over the 2006 beach season, HEALTH attempted to collect samples on several consecutive days after significant rain events. Based on preliminary data, it appears that Greenwich Bay beaches are typically impacted by rain events greater than 2-inches, but appear to flush within a 24-hour dry period. Maintenance staff increased efforts to empty trash bins and remove all potential sources that might attract wildlife.</p> <p>RIDEM's Total Maximum Daily Load (TMDL) Program for Greenwich Bay details comprehensive management actions that will be taken, but their benefit will not be known for several years. In cooperation with the TMDL Program, the Coastal Resource Management Council's (CRMC's) Greenwich Bay Special Area Management Plan (SAMP) will focus on all aspects of pollution sources within the Greenwich Bay watershed.</p> <p>As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches. All parties have met several times and are working to develop an action plan that will detail the next steps to be taken to continue improvement at Warwick's beaches and end beach closures at these facilities.</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEMS/IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
Conimicut Point Beach	Point Avenue, Warwick	Wildlife/Birds, Potential CSO/SSO Impacts	<p>Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Conduct sampling in vicinity of Mill Cove area to ensure no bacteria from this area is contributing to beach closures. Refocus sampling efforts in the Upper Narragansett Bay to study the contrast between existing offshore data and existing bathing beach data.</p>	<p>HEALTH conducted a comprehensive survey in the Spring of 2006 to study stormwater impacts to the beach area, and in the vicinity of Mill Cove. HEALTH has met with RIDEM and NBC to discuss and coordinate wet weather sampling activities at Conimicut. HEALTH will collect beach samples while NBC collects offshore samples in the vicinity of the beach during a four-day wet weather event. HEALTH, RIDEM and NBC are ready to mobilize when weather cooperates.</p> <p>RIDEM's Total Maximum Daily Load (TMDL) Program for Greenwich Bay details comprehensive management actions that will be taken, but their benefit will not be known for several years. In cooperation with the TMDL Program, the Coastal Resource Management Council's (CRMC's) Greenwich Bay Special Area Management Plan (SAMP) will focus on all aspects of pollution sources within the Greenwich Bay watershed.</p> <p>As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches. All parties have met several times and are working to develop an action plan that will detail the next steps to be taken to continue improvement at Warwick's beaches and end beach closures at these facilities.</p>
Easton's Beach*	Memorial Boulevard, Newport	Stormwater, CSO/SSO, vegetation	<p>Investigate sources of pollution in the Newport and Middletown stormwater drainage systems impacting the stream that discharges between Easton's Beach and the Atlantic Beach Club Beach. Correct any sewage disposal violations found. RIDOT will identify any State owned drains that may be contributing to the pollution problem. Remove excessive amounts of seaweed from Easton's Beach under an approved CRMC permit.</p>	<p>During the 2007 beach season, Easton's Beach in Newport, Rhode Island was closed for 4 days and Atlantic Beach Club Beach in Middletown, Rhode Island (located adjacent to Easton's) was closed for 8 days. Compared to 12 closure days for Easton's Beach and 30 closure days at Atlantic Beach Club Beach in 2006, this represents a significant decrease. Numerous studies conducted in the vicinity of Easton's Beach have determined that stormwater from several outfalls, a stream, pump station overflows and seaweed are all sources impacting the water quality in this area.</p> <p>The Town of Middletown is currently upgrading the sewer infrastructure in the vicinity of Easton's Beach, as well as the Wave Avenue Pump Station. Upgrades for the majority of this system in the vicinity of Easton's Beach and the pump station were completed by May 2007. The Town of Middletown is also studying potential solutions to stormwater issues in the vicinity of the beach area. HEALTH met with Town of Middletown and City of Newport officials, RIDEM and local environmental groups several times over the 2007 beach season to work on strategies to improve water quality and to keep an open dialogue between all those involved.</p> <p>In the winter of 2007, the City of Newport granted money to a local Aquidneck Island volunteer organization, Clean Ocean Access (COA), to continue sampling Easton's Beach and Atlantic Beach Club Beach during the off-season when surfers utilize the beach area. This study is unique since HEALTH does not generally</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEMS/IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
				<p>sample any of Rhode Island's beaches during the off-season (with the exception of short-term special studies). The City of Newport agreed to pay for sample analysis from January through May, and COA agreed to provide all necessary manpower.</p> <p>COA's involvement parallels the sentiment of many citizens of Middletown and Newport to get involved with issues affecting the water they swim in. The City of Newport and Town of Middletown have also demonstrated a dedicated effort to work collectively towards methods to eradicate local water pollution problems. After petitioning the City of Newport, COA was able to convince Newport officials to support continued funding of these off-season sampling efforts as well as sampling year round through 2008 at several non-licensed swimming areas on Aquidneck Island. COA is targeting sampling to after rain events.</p> <p>HEALTH will continue to work with COA to provide support and technical assistance. HEALTH plans to conduct surveys at the non-licensed swimming areas to reconsider these areas for sampling under the Beach Program.</p>
<p>Goddard Memorial Park State Beach**</p>	<p>Ives Road, Warwick</p>	<p>Stormwater, Boater Discharge, Wildlife/Birds</p>	<p>Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Conduct wet weather sampling to determine the impact of stormwater drains onto the beach. If bacteria loadings are significant, RIDEM will conduct a feasibility study to evaluate abatement measures for the runoff. Implement Greenwich Bay Total Maximum Daily Load (TMDL) water quality restoration plan and the Special Area Management Plan (SAMP). Implement the State's "No Discharge Law".</p>	<p>Over the 2006 beach season, HEALTH attempted to collect samples on several consecutive days after significant rain events. Based on preliminary data, it appears that Greenwich Bay beaches are typically impacted by rain events greater than 2-inches, but appear to flush within a 24-hour dry period. It was also noted that certain sample stations would have higher counts than others based on a population of geese that frequented the area. Maintenance staff increased efforts to empty trash bins and remove all potential sources that might attract wildlife.</p> <p>RIDEM's Total Maximum Daily Load (TMDL) Program for Greenwich Bay details comprehensive management actions that will be taken, but their benefit will not be known for several years. In cooperation with the TMDL Program, the Coastal Resource Management Council's (CRMC's) Greenwich Bay Special Area Management Plan (SAMP) will focus on all aspects of pollution sources within the Greenwich Bay watershed.</p> <p>As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches. All parties have met several times and are working to develop an action plan that will detail the next steps to be taken to continue improvement at Warwick's beaches and end beach closures at these facilities.</p> <p>EPA's National Epidemiological and Environmental Assessment of Recreational (NEEAR) Water Study was conducted at Goddard State Park Beach from June 23rd through Labor Day on weekends and holidays during the 2007 beach season. The main goals of the study were to determine new ways of analyzing water samples to provide real-time water quality measurements (i.e. rapid 2-hour tests), and to help</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEMS/IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
				<p>gain a better understanding between water pollution, swimming at the beach, and peoples' health (through interviews regarding illness, exposure, etc.) Representatives from EPA, the Center for Disease Control (CDC) and Westat (EPA's contractor) conducted interviews of beach goers and collected water samples throughout the beach season. Results should be ready for viewing by late spring of 2008.</p>
<p>King Park Beach</p>	<p>Wellington Avenue, Newport</p>	<p>Stormwater, Boater Discharge, Wildlife/Birds, CSO/SSO</p>	<p>In 2004, the City of Newport closed this facility due to budget constraints. However, many bathers still use this facility during summer months and therefore, the correction of pollution problems at this beach is still important. Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. HEALTH and RIDEM will conduct a survey of this facility to evaluate stormwater effects. RIDEM will continue to work with the City of Newport to eliminate CSOs. Implement the State's "No Discharge Law".</p>	<p>Over the beach season, HEALTH conducted several quick surveys at this facility to see if people were swimming at the beach area, and to observe the amount of wildlife. On all occasions, no people were in the water, and wildlife was limited to just a few gulls. Conditions at this facility should continue to improve as the "No Discharge Law" is enforced, and the City of Newport improves its sewer and stormwater infrastructure.</p> <p>In the winter of 2007, the City of Newport granted money to a local Aquidneck Island volunteer organization, Clean Ocean Access (COA), to support funding of off-season sampling efforts as well as sampling year round through 2008 at several non-licensed swimming areas on Aquidneck Island, including King Park Beach. COA is targeting sampling to after rain events.</p> <p>HEALTH will continue to work with COA to provide support and technical assistance. HEALTH plans to conduct surveys at the non-licensed swimming areas to reconsider these areas for sampling under the Beach Program.</p>
<p>Oakland Beach</p>	<p>Oakland Beach Avenue, Warwick</p>	<p>Stormwater, Boater Discharge, Wildlife/Birds</p>	<p>Cover trashcans and empty cans regularly in order to control waterfowl/bird populations. Implement Greenwich Bay Total Maximum Daily Load (TMDL) water quality restoration plan and the Special Area Management Plan (SAMP). Implement the State's "No Discharge Law".</p>	<p>Over the 2006 beach season, HEALTH attempted to collect samples on several consecutive days after significant rain events. Based on preliminary data, it appears that Greenwich Bay beaches are typically impacted by rain events greater than 2-inches, but appear to flush within a 24-hour dry period. It was also noted that certain sample stations would have higher counts than others based on a population of geese that frequented the area. Maintenance staff increased efforts to empty trash bins and remove all potential sources that might attract wildlife.</p> <p>RIDEM's Total Maximum Daily Load (TMDL) Program for Greenwich Bay details comprehensive management actions that will be taken, but their benefit will not be known for several years. In cooperation with the TMDL Program, the Coastal Resource Management Council's (CRMC's) Greenwich Bay Special Area Management Plan (SAMP) will focus on all aspects of pollution sources within the Greenwich Bay watershed.</p> <p>As part of the EPA New England Beach Strategy, HEALTH is working with EPA, RIDEM and the City of Warwick to identify sources of contamination at Warwick's beaches, coordinate efforts in monitoring and data exchange and working to correct issues facing these beaches. All parties have met several times and are working to develop an action plan that will detail the next steps to be taken</p>

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEMS/IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
				to continue improvement at Warwick's beaches and end beach closures at these facilities.
Scarborough State Beach**	Ocean Road, Narragansett	Stormwater, Wildlife/Birds	Sewer the Black Point Area. Sewer Knowles Campground. Additional measures needed to treat stormwater and/or remove sources from beach area. Smart Sponge Plus Material (a bacteria reduction system) was inserted into three of the stormwater outfalls on the beach by an engineering company in cooperation with RIDOT. Possibility of re-directing stormwater flow by moving the existing pipes in a way that will decrease the number of swimming areas affected by pollution inputs from outfalls.	<p>Twice a week monitoring during the 2005 bathing season showed continued violations of the single sample and geometric mean standard in each of the outfall pipes on a regular basis. HEALTH met with RIDOT in January 2006 to discuss the 2005 sample results obtained by HEALTH. According to RIDOT, the Smart Sponge® was not installed in the correct manner, thereby stormwater was not properly treated by the sponge.</p> <p>In March 2006, HEALTH and RIDEM decided that the Smart Sponge technique may not be sufficient to eliminate high bacteria counts during all wet weather events and asked RIDOT to develop additional stormwater solution strategies at Scarborough. RIDOT is currently working on this request. Possible solutions to be investigated include determining flow from nearby wetlands, use of grassy areas for infiltration instead of discharging to the beach area and the potential of diverting several of the discharge outfalls further from the swimming area. Additionally, based on the known high bacteria counts at the stormwater outfalls, HEALTH required the beach facility to post signs at all stormwater outfalls, stating not to swim within 200-feet of any running outfall. Signs were posted by August 2006.</p> <p>During the Spring of 2007, RIDOT installed Smart Sponge in the Burnside Avenue Outfall to determine if low flow stormwater could effectively be treated by the Smart Sponge. The Smart Sponge was maintained and monitored throughout the beach season by RIDOT. Additional research was performed during 2007 on the Ocean Road and Burnside Avenue closed drainage systems. The research also included the sub-drain and closed drainage within the parking lot on the southwest corner of the intersection of Burnside Avenue and Ocean Road. The research and sampling of the drainage systems was to attempt to identify the sources of bacteria discharging at the Burnside Outfall.</p> <p>An analysis of flushing and circulation patterns is planned to aid in identifying possible measures for alternative stormwater outfall design.. HEALTH will continue to research solutions and collaborate with RIDOT and RIDEM to implement new strategies at Scarborough State Beach, one of the most highly visited beaches by the public in RI. HEALTH plans to meet with RIDOH and RIDEM prior to the 2008 Beach Season.</p>
Warren Town Beach**	Water Street, Warren	Stormwater, Boater Discharge	RIDEM will work with the Town of Warren to use the 319 Grant Program to fund additional storm water remediation efforts at the Warren Town Beach and in the upstream Palmer River watershed. HEALTH will conduct additional wet weather sampling to ensure all local pollution sources have been	In 2003, site evaluations were conducted at the beach. Two stormwater pipes were identified to be emitting water with high bacteria counts onto the beach. Further studies revealed that a sewer overflow pipe located approximately 6 feet from the suspect stormwater pipes was in disrepair. Upon repair of the sewer infrastructure, wet weather sampling activities showed dramatic improvement in bacteria levels. Twice a week monitoring during the 2004 bathing season showed no violations of either the single sample or geometric mean standard. Warren Town Beach was

Status of Flagship Beaches and Governor's Priority Beaches

BEACH NAME	LOCATION	PROBLEMS/IMPACTS	PROPOSED SOLUTIONS	CURRENT STATUS
			addressed.	<p>closed for only one day in 2005 after a substantial rainfall event of greater than 2.6 inches of rain in a 24-hour period.</p> <p>However, during the 2006 beach season, Warren Town Beach was closed for 29 days, the majority of closures resulting from heavy rainfall. Since 2006 HEALTH has conducted dry and wet weather sampling studies of catchbasins and the beach to determine cause of elevated bacteria levels. In August 2007 Warren slip-lined a sewer pipe and replaced a deteriorating catchbasin adjacent to the beach in an attempt to reduce bacteria levels at the beach from a nearby stormwater pipe. Unfortunately, wet weather sampling continued to show high results.</p> <p>In September 2007, the Town of Warren hired a consulting firm (Fuss & O'Neill) to conduct a study in the vicinity of the beach to determine what is once again affecting water quality. Fuss & O'Neill completed the study by the beginning of December. The study included installation of groundwater monitoring wells in the vicinity of the beach, flow studies and conducting wet weather sampling at the beach and just offshore.</p> <p>Preliminary results indicate sewage is seeping into groundwater in the vicinity of the beach, and making its way into the bathing water. Potential contributors of sanitary wastewater near the beach are the sanitary sewer line on Water Street and the pumpout tank at Blount Shipyard (to the north). No indication of contamination from offshore sources was found. High levels of Enterococci were also found in the stormwater, but not at concentrations, which could escalate the beach water to such high levels. Proposed recommendations from Fuss & O'Neill included: addressing the groundwater quality in the vicinity of the beach, conducting dye testing of each sewer to determine whether it has a hydraulic connection to the beach and installing an additional monitoring well east and upgradient of the beach to determine if groundwater upgradient of the sewer lines is clean.</p> <p>The sewer lines were televised and the storage tank at Blount Shipyard was inspected visually. A crack was found in the tank, but no visual signs of leakage were observed, and two breaks in the sanitary lateral that runs perpendicular to Water Street and serves Blount were observed.</p> <p>Fuss & O'Neill is currently in the process of preparing to dye test three sections of sanitary sewer line in the area of the beach. This has included fieldwork to investigate the condition/construction of the pipes and tank that serve Blount.</p>

*Atlantic Beach Club Beach is located directly adjacent to Easton's Beach and is separated from this facility by a stream which drains two ponds, as well as handles overflows from the Wave Avenue Pump Station. As such, the Atlantic Beach Club Beach has been experiencing similar issues and closures as Easton's, and is being included in all investigative and improvement efforts.

**In 2002, the USEPA and HEALTH designated three beaches in Rhode Island as "Flagship Beaches". The USEPA defines Flagship Beaches as high-use beaches with a history of closures, extended periods of poor water quality and serving a diverse socioeconomic user group. During the 2002 season, Goddard Park in Warwick, Warren Town Beach in Warren, and King Park Swim Area in Newport were designated as Rhode Island's Flagship Beaches. However, due to the closure of King Park in 2004 by the City of Newport, Scarborough State Beach in Narragansett was designated as a Flagship Beach.

Appendix F

Rhode Island Beach Closure Days 1998 to 2007

RHODE ISLAND BEACH CLOSURES 1998 to 2006

Beach	Freshwater (FW)/ Saltwater (SW)	1998			1999			2000			2001			2002			2003			2004			2005			2006			2007		
		Closed	Opened	Days	Closed	Opened	Days	Closed	Opened	Days	Closed	Open	Days	Closed	Open	Days	Closed	Open	Days	Closed	Open	Days	Closed	Open	Days	Closed	Open	Days			
Atlantic Beach Club	SW														7/25/03	7/26/03	1	7/29/04	7/30/04	1	8/30/05	9/1/05	2	6/7/06	6/11/06	4	5/31/07	6/1/07	1		
															8/8/03	8/12/03	4	8/6/04	8/7/04	1				6/25/06	6/27/06	2	6/4/07	6/6/07	2		
																		8/15/04	8/18/04	3				7/6/06	7/10/06	4	8/10/07	8/15/07	5		
																		8/20/04	8/24/04	4				7/11/06	7/25/06	14					
																							7/29/06	7/31/06	2						
																							8/1/06	8/3/06	2						
																		8/31/04	9/2/04	2				8/28/06	8/30/06	2					
Aquapaug Scout Reservation	FW																	8/3/04	8/5/04	2	8/1/05	8/3/05	2								
Barrington Town Beach	SW	6/16/98	7/10/98	24											5/29/03	6/10/03	12	7/1/04	7/3/04	2	7/26/05	7/28/05	2	6/8/06	6/13/06	5	6/5/07	6/6/07	1		
		7/13/98	7/17/98	4											7/24/03	7/26/03	2	8/24/04	8/26/04	2	8/31/05	9/1/05	1	6/25/06	6/27/06	2	8/10/07	8/15/07	5		
															8/5/03	8/15/03	10						6/29/06	6/30/06	1						
																							7/27/06	7/29/06	2						
															8/28/03	9/1/03	4						8/16/06	8/18/06	2						
Bonnet Shores Beach	SW								8/15/01	8/25/01	10				6/24/03	6/27/03	3							6/21/06	6/23/06	2					
Bristol Town Beach	SW	6/16/98	6/26/98	10								8/14/02	8/16/02	2	5/29/03	6/10/03	12	6/2/04	6/3/04	1	8/31/05	9/1/05	1	6/6/06	6/13/06	7	6/5/07	6/6/07	1		
															6/24/03	6/26/03	2	7/29/04	7/31/04	2				6/16/06	6/17/06	1	8/10/07	8/15/07	5		
																							6/25/06	7/1/06	6						
															8/9/03	8/21/03	12						8/29/06	8/31/06	2						
Browning Mill Pond	FW																						7/20/06	8/10/06	21						
Buck Hill Campground	FW																						6/29/06	7/5/06	6						
Camp Canonicus	FW								8/17/01	8/27/01	10																				
Camp Fuller	SW																						7/5/06	7/13/06	8						
Camp Grosvenor	SW - Brackish														7/24/03	7/30/03	6	7/1/04	7/8/04	7	7/27/05	7/28/05	1	8/17/06	8/18/06	1	7/11/07	7/13/07	2		
																							8/21/06	8/24/06	3						
																							8/16/05	8/19/05	3						
Camp Massasoit	FW				7/21/99	7/22/99	1	7/3/00	7/5/00	2					7/21/03	7/31/03	8	8/12/04	8/20/04	8				8/11/06	8/15/06	4					
Camp Meehan	FW							7/24/00	8/3/00	10					8/15/03	9/1/03	17						7/21/06	7/25/06	4						
Camp Narrow River	SW - Brackish																														
Camp Ruggles	FW																						6/28/06	6/29/06	1						
Camp St. Dorothy	SW																						7/27/06	8/2/06	6						
Captain Roger Wheeler	SW														8/15/03	8/16/03	1														

Kent County YMCA	FW								7/6/01	7/21/01	15	6/27/02	7/1/02	4	6/25/03	6/30/03	5	6/18/04	6/22/04	4			6/29/06	7/7/06	8	7/20/07	7/21/07	1			
												7/25/02	7/29/02	4	8/6/03	8/12/03	6									8/2/07	8/3/07	1			
King Park	SW	6/17/98	6/18/98	1	8/8/99	8/12/99	4	7/28/00	8/4/00	7	7/5/01	7/6/01	1	6/11/02	6/13/02	2	5/27/03	5/30/03	3	6/2/03	6/3/04	1									
		7/1/98	7/2/98	1	8/18/99	8/20/99	2				7/11/01	7/13/01	2	6/26/02	7/1/02	5	6/8/03	6/12/03	4	6/11/04	6/17/04	7									
											7/26/01	7/30/01	4	7/25/02	7/27/02	2	6/19/03	6/25/03	6												
											8/13/01	8/17/01	4	7/29/02	7/31/02	2	7/3/03	7/5/03	2	Closed For Season in July 2004											
											8/20/01	8/22/01	2	8/2/02	8/4/02	2	7/24/03	7/26/03	2												
														8/31/02	9/2/02	2	8/8/03	8/12/03	4												
																	8/15/03	8/20/03	5												
Lincoln Woods	FW	7/20/98	7/23/98	3	7/9/99	7/11/99	2				5/25/01	5/30/01	5	6/27/02	6/28/02	1	6/27/03	6/29/03	2												
					7/23/99	7/24/99	1				6/29/01	7/3/01	4	8/1/02	8/5/02	4	8/1/03	8/4/03	3												
											8/9/01	8/12/01	3	8/7/02	8/8/02	1															
Mackerel Cove	SW																						8/29/06	8/31/06	2						
Matunuck Town Beach	SW																						7/11/06	7/13/06	2						
Ninigret Park	FW																8/14/03	8/15/03	1						8/31/05	9/1/05	1		8/8/07	8/9/07	1
North Kingstown Town Beach	SW																6/6/03	6/12/03	6	6/2/04	6/7/04	5			8/29/06	8/30/06	1	6/5/07	6/6/07	1	
																										6/12/07	6/15/07	3			
																	6/19/03	6/24/03	5	7/20/04	7/22/04	2			6/19/07	6/21/07	2				
Oakland Beach	SW	6/16/98	7/17/98	31				8/1/00	8/11/00	10	8/17/01	8/19/01	2	7/30/02	8/1/02	2	6/18/03	6/21/03	3	6/3/04	6/5/04	2	7/26/05	7/28/05	2	6/8/06	6/13/06	5	6/5/07	6/6/07	1
											8/22/01	9/1/01	10	8/7/02	8/9/02	2	6/25/03	7/3/03	8	7/16/04	7/20/04	4	8/23/05	8/25/05	2	6/15/06	6/16/06	1	7/6/07	7/7/07	1
														8/14/02	8/22/02	8	7/4/03	8/28/03	55	8/19/04	8/24/04	5	8/30/05	9/2/05	3	6/25/06	6/27/06	2	7/10/07	7/12/07	2
																							7/11/06	7/13/06	2	7/18/07	7/21/07	3			
																							7/19/06	7/21/06	2						
																							8/16/06	8/18/06	2						
																							8/29/06	8/30/06	1						
Plum Beach Club	SW																									9/1/07	9/2/07	1			
Pulaski Park	FW							6/12/00	6/15/00	3																					
Saunderstown Yacht Club	SW																6/6/03	6/12/03	6						6/27/06	6/29/06	2				
Scarborough State Beach North	SW																6/6/03	6/14/03	2	7/29/04	7/30/04	1	8/30/05	9/1/05	2	6/7/06	6/11/06	4	6/4/07	6/6/07	2
																	6/14/03	6/16/03	2	8/15/04	8/17/04	2			6/25/06	6/27/06	2	8/11/07	8/12/07	1	
																	6/16/03	6/19/03	1						8/28/06	8/30/06	2				
																	6/19/03	6/20/03	1												
																	6/20/03	7/3/03	1												
																	8/9/03	8/10/03	1												

Scarborough State Beach South	SW												6/10/03	6/12/03	2	7/29/04	7/30/04	1	8/30/05	9/1/05	2	6/7/06	6/11/06	4	6/4/07	6/6/07	2					
														6/12/03	6/14/03	2	8/15/04	8/17/04	2				6/25/06	6/27/06	2	8/11/07	8/12/07	1				
														6/14/03	6/16/03	2							8/28/06	8/30/06	2							
														6/16/03	6/19/03	1																
														6/19/03	6/20/03	1																
														6/20/03	7/3/03	1																
												8/9/03	8/10/03	1																		
Third Beach	SW					8/2/00	9/15/00	44								8/19/03	8/21/03	2				8/31/05	9/2/05	2	6/9/06	6/11/06	2	6/5/07	6/6/07	1		
									Partial Closure		Partial Closure																					
W. Alton Jones	FW																										7/24/07	7/25/07	1			
Warren Town Beach	SW	6/16/98	7/24/98	38	8/30/99	9/1/99	2	7/3/00	7/7/00	4	6/21/01	6/27/01	6	6/7/02	6/11/02	4	5/29/03	6/19/03	21				8/31/05	9/1/05	1	6/6/06	6/13/06	7	6/5/07	6/6/07	1	
											8/15/01	8/17/01	2	8/30/02	9/2/02	3	6/24/03	6/28/03	4							6/25/06	7/1/06	6	6/7/07	6/8/07	1	
												8/22/01	8/23/01	1				7/4/03	7/26/03	22						7/15/06	7/25/06	10	7/6/07	7/10/07	4	
																											8/1/06	8/3/06	2	7/21/07	7/24/07	3
																											8/16/06	8/18/06	2	8/9/07	8/15/07	6
																									8/29/06	8/31/06	2					
Willow Dell Beach Club	SW																								8/11/06	8/13/06	2					
World War II Memorial Park Beach	FW																											7/31/07	8/1/07	1		
Worden Pond	FW					7/14/00	7/18/00	4											5/20/04	5/26/04	6	No Samples Collected		No longer operating beach		No longer operating beach						
																			6/17/04	6/18/04	1											
Total Closure Days Per Year				190		20		103		148		103		459		122		65		351		96										