

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH RECREATION PROGRAM

ANNUAL BEACH GRANT REPORT

2016 Season

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Lighthouse Point Park, New Haven



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EPA BEACH GRANT # 00A00142

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Introduction

The Recreation Program of the Connecticut Department of Public Health (CT DPH) has completed Connecticut's 2016 Annual Report for the US Environmental Protection Agency (US EPA) Beach Grant #00A00142. This report describes the monitoring of regulated marine bathing areas and how the 2016 Draft Quality Assurance Project Plan (QAPP) is being implemented. It also provides information on public notification and water quality monitoring efforts. As part of the Beach Grant work plan, Connecticut provides US EPA with seasonal data for marine recreational water quality monitoring and information on the times and duration of interventions. Much of these data are summarized within this report. Furthermore, it describes how 24 shoreline towns, 19 local health agencies, CT DPH, and Connecticut's Department of Energy and Environmental Protection (CT DEEP) work together to monitor the shoreline marine beaches.

A: Elements of the Beach Monitoring and Notification Program

The Beach Grant includes specific goals for both US EPA and recipient states. The goals for Connecticut are achieved by following a carefully developed work plan. The work plan addresses the twelve (12) specific identified activities described below.

A1: CT DEEP Beach Monitoring. CT DEEP performs weekly or more frequent beach monitoring at 4 coastal state beaches. The coastal State beaches include the following: Sherwood Island State Park, Westport; Silver Sands State Park, Milford; Hammonasset State Park, Madison; and Rocky Neck State Park, East Lyme. Beach sampling will begin the week before Memorial Day and ends prior to Labor Day. This activity proceeds according to the *QAPP*. The beach monitoring that is conducted at the coastal state beaches is partial funded under a Memorandum of Agreement executed with the CT DEEP. This funding is used to hire seasonal personnel who are responsible for the collection of the water samples and the transport of samples to the CT DPH Microbiology Laboratory. In 2016, the CT DPH Laboratory analyzed 265 samples collected at the coastal State Park beaches.

A2: CT DPH Microbiology Laboratory. CT DPH provides indicator bacteria analysis services for beach samples at no cost to CT DEEP and local health agencies. The courier service has regional drop off locations where local officials may transfer beach samples to a courier for delivery of samples to the CT DPH Microbiology Laboratory in Rocky Hill. The DPH Recreation Program partially funds the hiring of seasonal personnel by the CT DPH Microbiology Laboratory, vehicle rental, and the purchase of laboratory supplies associated with the monitoring process. The seasonal employees provide the courier services to local health agencies and perform the laboratory services associated with the analysis of water samples. In 2016, the CT DPH Laboratory analyzed 1465 samples collected at all beaches along the Connecticut coastline. This represents approximately 70% of all 2091 enterococci samples collected on Connecticut marine beaches and sent to US EPA in 2016.

A3: Methods and Quality Control. Sampling design and methods are described in the *QAPP*. The established bacterial indicator for designated marine bathing water in Connecticut is

Enterococci. The benchmark single sample criterion is 104 Colony Forming Units (CFU) or Most Probable Number (MPN)), with a five-sample geometric mean benchmark of 35.

According to Criterion 10 of the National Beach Guidance and Required Performance Criteria for Grants, 2014 Edition, states and tribes receiving beach grants under the CWA section 406 are expected to select a beach notification threshold, i.e.; the Beach Action Value (BAV), that is based on the 75th percentile value of the illness rate in EPA's 2012 Recreational Water Quality Criteria. However, states and tribes have the option to submit a written justification to use an alternative value. The CT DPH has submitted to EPA its justification for maintaining the current threshold values for 2016 instead of the EPA-preferred BAV value. EPA's response is included as Appendix C.

A4: Coastal Recreational Waters List. CT DPH provides US EPA with a list of regulated marine bathing areas and monitoring site locations where data are collected. In 2016 there were 73 beaches on this list. This list also includes one dormant beach that is being monitored (Fort Hale-New Haven), and one active beach that is not being monitored (Dubois Beach-Stonington).

A5: Local Beach Monitoring and Notification. Local public beaches are monitored by municipal health department officials or regional health district personnel. The monitoring and closure/advisory practices at such coastal beaches are the responsibility of the local health authorities under the guidance of the CT DPH. The Connecticut General Statutes outlines enforcement authority under Chapter 98, Municipal Powers. Section 7-148 states that municipalities have the power to "control and operate" recreation places, public beaches and beach facilities. They also have the power to "regulate and prohibit swimming or bathing in the public or exposed places within the municipality". (See https://www.cga.ct.gov/current/pub/chap_098.htm#sec_7-148)

A6: Communicating Beach Location, Closure/Advisory, Notification, Potential Pollution Sources, and Monitoring Information. The CT DPH Recreation Program uses an annual US EPA Beach Survey to collect organization, beach contact, location updates, closure, advisory, public notification, and known potential pollution source data for the regulated marine bathing areas under the authority of shoreline towns and CT DEEP. The 2016 Annual Review of Marine Beach Monitoring and Notification Data has been compiled and was distributed to municipalities and CT DEEP on February 8th, 2017. These monitoring and survey data are validated, stored electronically in a local Access database developed and maintained by the CT DPH Recreation Program. The data are subsequently reformatted, translated and parsed for upload to US EPA. The monitoring data was compiled and accepted into EPA databases on January 13th, 2017, while the notification data was compiled and accepted into EPA databases on January 4th, 2017. Monitoring data for the CT DEEP state park coastal bathing areas are provided to US EPA directly by CT DEEP, in accordance with the Memorandum of Agreement.

A7: Measures that Inform the Public of Potential Risks. Each year prior to the opening of Connecticut's beach season, the CT DEEP and CT DPH collaboratively issue a press release that discusses the state beach monitoring program and informs the public of potential risks associated with swimming in contaminated waters. The CT DPH provides the risk information on the CT DPH Recreation Program Web site (www.ct.gov/dph/publicbeaches). The site contains a listing of all municipal and state park regulated marine bathing areas and their tiered

classification. It contains links to local health agencies and CT DEEP for the most up-to-date information about beach status. The site also contains links to beach related topics on US EPA and US Center for Disease Control and Prevention web sites. Communicating the status of state park beaches is accomplished by updating both the CT DEEP web site, and the State Beach “hotline”. Updates are accomplished the same day (Monday through Friday) as results are received from the CT DPH laboratory. Notifications procedures for CT municipalities compiled from closure data for years 2003-2016 are shown in Table A1.

Table A1: Public Notification Procedures Listed by current State or municipal agencies. This list includes all current regulating agencies with a history of closing beaches.

Municipal/State Agency	Post at Beach	Post on Web	Via Newspaper	Via Hotline	Close Area	Via Radio	Via TV
Norwalk Health Department	✓	✓	✓	✓			
Old Lyme Health Department	✓	✓	✓				✓
Stamford Health Department	✓	✓	✓	✓	✓	✓	
Stratford Health Department	✓	✓		✓		✓	✓
Bridgeport Health Department			✓		✓	✓	✓
Westbrook Health Department	✓	✓					
West Haven Health Department	✓	✓			✓		
Ledge Light Health District	✓	✓					
Connecticut River Area Health District				✓			
Darien Health Department	✓	✓		✓			
Westport Weston Health District	✓	✓	✓		✓	✓	✓
East Shore District Health Department	✓	✓	✓	✓			
Connecticut Department of Energy & Environmental Protection	✓	✓	✓	✓	✓	✓	✓
Fairfield Health Department	✓	✓	✓	✓	✓	✓	✓
Greenwich Department of Health	✓	✓	✓	✓	✓	✓	
Guilford Health Department				✓			
Milford Health Department	✓	✓	✓	✓		✓	✓
New Haven Health Department					✓		

A8: Coastal Beach Monitoring Meetings with Public Health Officials. CT DPH hosts a spring meeting for coastal Public Health Officials to review the current status of the Beach Grant in Connecticut. Speakers at the meeting have previously included representatives of US EPA Region 1, CT DPH State Laboratory, and the Aquaculture Division of the Department of Agriculture (for shellfish), municipal government officials and CT DPH. The agenda includes a review of protocols for collecting beach closure and advisory information during the bathing season plus guidance/training for collecting and transporting samples. The draft agenda for the May, 2016 meeting is found in Appendix A.

A9: Providing Beach Grant Generated Data upon Request. At various times throughout the year, the CT DPH Recreation Program receives requests from conservation organizations and other interested parties for the notification and monitoring data. The CT DPH Recreation Program assembles data sets and makes them available after a consultation with the Data Coordinator. The DPH Recreation Program responded to two requests for the 2016 data during the period of this grant. The first request was from CT Council on Environmental Quality, and the second was from the East Shore District Health Department.

A10: US EPA Annual Report. CT DPH prepares and submits an annual Beach Grant report to US EPA Region 1 using a format that was developed jointly between US EPA Region 1 and CT DPH. The annual report includes descriptions of beach data collection and management along with performance criteria and beach data summaries.

A11: Education and Outreach. When CT DPH is invited to explain or review Connecticut's beach monitoring effort, presentations describe the history of beach monitoring in Connecticut, current beach monitoring guidelines, and implementation programs. Connecticut's beach monitoring effort is presented in the annual Environmental Health Training offered at Southern Connecticut State University.

A12: Assorted Office Supplies and Related Equipment. Implementing the Beach Grant generates assorted office supply and related equipment ordering activity. Supplies include paper, color toner cartridges, binders, audio visual and computer equipment ordered to support daily operations and the semi-annual meeting for coastal Public Health officials.

B: CT DPH Staff and Responsibilities

Of the four (4) CT DPH staff positions described on this page, the Beach Grant serves to partially fund the Beach Grant data coordinator position.

The Beach Grant coordinator (Scott Szalkiewicz) is responsible for; working cooperatively with the EPA Region 1 Grant Manager (Ann Rodney) in preparing the grant application and budget, work plan development and implementation, grant coordination with CT DEEP and the CT DPH State Laboratory, providing interpretive guidance to shoreline local health departments and CT DEEP for beach closures, and integrating Beach Grant related activities with public health issues in Connecticut.

The Beach Grant data coordinator (Stewart Chute) is responsible for; providing custom beach data sets upon request and analytic/technical assistance to support beach monitoring, preparing Connecticut's annual US EPA Beach Survey used to collect notification and pollution source data, assembling beach monitoring and notification data, organizing and presenting at the shoreline meeting for Public Health Officials, processing and packaging beach data for transmittal to US EPA, writing Connecticut's Annual Report for the US EPA Beach Grant, maintaining/updating the local custom database that CT DPH uses to hold and manage Beach Grant and related data, and participating in biweekly conference calls with EPA technical staff as needed.

The Supervising Microbiologist (Kim Holmes-Talbot) oversees the CT DPH Microbiology Laboratory where marine recreational water samples are tested for Enterococci. Additionally, she hires seasonal staff for the courier sample pick up service and trains them to help perform indicator bacteria testing conducted during the summer. Sample results data are provided by the Laboratory to CT DPH, local health departments and CT DEEP.

The Quality Assurance Program Plan (QAPP) developer (Jeff Curran) was responsible for updating and maintaining the Quality Assurance Project Plan for the Beach Monitoring and Notification Program for Connecticut Coastal Beaches. This required experience in writing and reviewing quality assurance project plans for various types of environmental programs and projects.

C: Performance Criteria and Attainment of Grant Criteria

The Federal Clean Water Act section 406(a) and Section 406(b) authorizes the US Environmental Protection Agency (US EPA) to award grants to implement monitoring and notification programs, but only if the programs meet certain requirements. One of these requirements is that the monitoring and notification programs be consistent with EPA’s performance criteria. These performance criteria provide the basis for US EPA’s evaluation of Connecticut’s 406(b) grant award. The general requirements US EPA’s nine performance criteria are summarized in Table C1.

Table C1: Generalized Description of US EPA’s Nine Performance Criteria for Grant Recipients.

Category	Performance Criterion	Criterion General Requirements
Evaluation and Classification	1	Develop risk-based beach evaluation and classification plan
	2	Develop tiered monitoring plan
Monitoring	3	Monitoring report submission and delegation
	4	Methods and assessment procedures
Public Notification and Prompt Risk Communication	5	Public notification and risk communication plan
	6	Measures to notify EPA and local governments
	7	Measures to notify the public
Public Evaluation	8	Notification report submission and delegation
	9	Public evaluation of program

CT DPH maintains a beach monitoring and notification program in compliance with the nine performance criteria listed above. In brief, using custom software CT DPH receives, manages, maintains and uses marine beach data supplied to it by the state laboratory, local health departments and CT DEEP. Beach data sets are interrelated and include: a roster of beach managers and regulated marine bathing areas; current geospatial location data for these beaches and their sampling stations; a beach tier list that is updated annually; date and time stamped water quality monitoring results; beach closure and advisory events including extent of beach, duration and cause; and ways the public is notified of

beach closures and advisories. CT DPH's custom software is enabled for both incoming and outgoing electronic data interchange and includes utilities to cross check and validate beach data. This monitoring and notification system and its associated database have been used, adapted, and improved since 2003.

The purpose of this Section is to describe CT DPH's beach monitoring and notification program within the context of the nine criteria shown in Table C1. To this end, a brief sequential summary of each criterion is presented below.

C1: Performance Criterion 1: Develop Risk-Based Beach Evaluation & Classification Plan:

The US EPA beach grant requires funds to be prioritized based on water usage and risk to human health. To fulfill this requirement, CT DPH has developed a risk-based beach evaluation and classification procedure for coastal recreational waters. This plan is part of the "Beach Monitoring and Notification Program for Connecticut Coastal Beaches", (Quality Assurance Project Plan - RFA11178) The 2016 Quality Assurance Project Plan is in draft form.

C2: Performance Criterion 2: Develop Tiered Monitoring Plan:

The Tiered Monitoring Plan (TMP) addresses monitoring frequency, location and assessment of coastal waters. The TMP is based on the Risk-Based Beach Evaluation and Classification. The TMP is reviewed and revised on an annual basis. The evaluation and classification plan considers factors of beach usage, historical environmental conditions, past test results, and if a beach is listed by CT DEEP as impaired according to Federal 305(b)/303(d) methodology. Coastal beaches are evaluated weekly during the season and classified annually on the potential threat public health visitors might face (Table C2).

Connecticut beaches are ranked in three tiers with a classification scheme as follows:

- Tier I beaches had no more than one closure occurrence during the season.
- Tier II beaches had no more than three closure occurrences during the season.
- Tier III beaches do not meet minimum recommended sampling requirements, or had more than three closure events during the season.

Table C2: Tier Rank. CT regulated beaches are listed by Town along with rank and change in rank relative to the previous season. Column “C” denotes the change in Tier Rank relative to the previous season.

TOWN	Beach Name	2016	2015	C
BRANFORD	BRANFORD POINT BEACH	tier 1	tier 1	=
BRANFORD	CLARK AVENUE BEACH	tier 1	tier 1	=
BRANFORD	STONY CREEK BEACH	tier 1	tier 1	=
BRIDGEPORT	PLEASURE BEACH-BRIDGEPORT	tier 1	tier 1	=
BRIDGEPORT	SEASIDE PARK BEACH	tier 1	tier 1	=
CLINTON	TOWN BEACH (CLINTON)	tier 2	tier 1	<
DARIEN	PEAR TREE POINT BEACH	tier 1	tier 2	>
DARIEN	WEED BEACH	tier 1	tier 2	>
EAST HAVEN	EAST HAVEN TOWN BEACH	tier 1	tier 1	=
EAST LYME	HOLE-IN-THE-WALL BEACH	tier 1	tier 1	=
EAST LYME	MCCOOK POINT BEACH	tier 1	tier 1	=
EAST LYME	ROCKY NECK STATE PARK BEACH	tier 1	tier 1	=
FAIRFIELD	JENNINGS BEACH	tier 1	tier 2	>
FAIRFIELD	PENFIELD BEACH	tier 1	tier 2	>
FAIRFIELD	SASCO BEACH	tier 1	tier 2	>
FAIRFIELD	SOUTH PINE CREEK BEACH	tier 1	tier 2	>
FAIRFIELD	SOUTHPORT BEACH	tier 1	tier 2	>
GREENWICH	BYRAM BEACH	tier 3	tier 2	<
GREENWICH	GREAT CAPTAIN'S ISLAND BEACH	tier 1	tier 1	=
GREENWICH	GREENWICH POINT BEACH	tier 2	tier 1	<
GREENWICH	ISLAND BEACH	tier 1	tier 1	=
GROTON	EASTERN POINT BEACH	tier 1	tier 1	=
GROTON	ESKER POINT BEACH	tier 1	tier 1	=
GROTON	NOANK DOCK	tier 1	tier 1	=
GUILFORD	JACOBS BEACH (TOWN BEACH)	tier 1	tier 1	=
MADISON	EAST WHARF BEACH	tier 1	tier 1	=
MADISON	HAMMONASSET BEACH	tier 1	tier 1	=
MADISON	PENT ROAD BEACH	tier 1	tier 1	=
MADISON	SURF CLUB BEACH	tier 1	tier 1	=
MADISON	WEST WHARF BEACH	tier 1	tier 1	=
MILFORD	ANCHOR BEACH (MERWIN POINT) #1	tier 1	tier 1	=
MILFORD	ANCHOR BEACH (MERWIN POINT) #2	tier 1	tier 1	=
MILFORD	GULF BEACH	tier 1	tier 1	=
MILFORD	SILVER SANDS STATE PARK BEACH	tier 2	tier 2	=
MILFORD	WALNUT BEACH	tier 1	tier 1	=
MILFORD	WOODMONT BEACH	tier 1	tier 1	=

TOWN	Beach Name	2016	2015	C
NEW HAVEN	FORT HALE PARK BEACH	tier 1	tier 1	=
NEW HAVEN	LIGHTHOUSE POINT BEACH	tier 1	tier 1	=
NEW LONDON	GREEN HARBOR BEACH	tier 1	tier 1	=
NEW LONDON	OCEAN BEACH PARK	tier 1	tier 1	=
NORWALK	BELL ISLAND BEACH	tier 1	tier 1	=
NORWALK	CALF PASTURE BEACH	tier 2	tier 1	<
NORWALK	HICKORY BLUFF BEACH	tier 1	tier 1	=
NORWALK	MARVIN BEACH	tier 1	tier 1	=
NORWALK	ROWAYTON BEACH	tier 1	tier 1	=
NORWALK	SHADY BEACH	tier 2	tier 1	<
OLD LYME	SOUNDVIEW BEACH	tier 1	tier 1	=
OLD LYME	WHITE SANDS BEACH	tier 1	tier 1	=
OLD SAYBROOK	HARVEY'S BEACH	tier 1	tier 1	=
OLD SAYBROOK	TOWN BEACH (OLD SAYBROOK)	tier 1	tier 1	=
STAMFORD	CUMMINGS BEACH	tier 3	tier 2	<
STAMFORD	EAST (COVE ISLAND) BEACH	tier 3	tier 2	<
STAMFORD	QUIGLEY BEACH	tier 3	tier 2	<
STAMFORD	WEST BEACH	tier 3	tier 2	<

STONINGTON	DUBOIS BEACH	tier 3	tier 3	=
STRATFORD	LONG BEACH (MARNICK'S)	tier 1	tier 1	=
STRATFORD	LONG BEACH (PROPER)	tier 1	tier 1	=
STRATFORD	SHORT BEACH	tier 1	tier 1	=
WATERFORD	PLEASURE BEACH-WATERFORD	tier 1	tier 1	=
WATERFORD	WATERFORD TOWN BEACH	tier 1	tier 1	=
WEST HAVEN	ALTSCHULER BEACH	tier 2	tier 1	<
WEST HAVEN	DAWSON BEACH	tier 3	tier 1	<
WEST HAVEN	MORSE BEACH	tier 1	tier 1	=
WEST HAVEN	OAK STREET A BEACH	tier 2	tier 1	<
WEST HAVEN	OAK STREET B BEACH	tier 2	tier 1	<
WEST HAVEN	ROCK STREET BEACH	tier 3	tier 1	<
WEST HAVEN	SEABLUFF BEACH	tier 3	tier 1	<
WEST HAVEN	SEAVIEW BEACH	tier 3	tier 1	<
WEST HAVEN	SOUTH STREET BEACH	tier 2	tier 1	<
WESTBROOK	WESTBROOK TOWN/WEST BEACH	tier 1	tier 3	>
WESTPORT	BURYING HILL BEACH	tier 1	tier 1	=
WESTPORT	COMPO BEACH	tier 1	tier 1	=
WESTPORT	SHERWOOD ISLAND	tier 1	tier 2	>

C3: Performance Criterion 3: Monitoring Report Submission and Delegation:

The CT DPH beach database is a stand-alone Access database. The module was completed and fully operational in October 2003 and has been constantly improved and adapted to changing needs. The database contains monitoring data on the beaches and information on associated contacts, advisories, pollution sources, and reported illnesses. Beaches are related to monitoring data in the core of the database. The module meets the XML data sharing protocols specified by US EPA. The complete monitoring data set for the 2016 season was submitted to US EPA on January 13th, 2017, and is available from their Beacon 2 website (<http://watersgeo.epa.gov/beacon2>).

C4: Performance Criterion 4: Methods and Assessment Procedures:

All methods for assessing ambient waters and for making decisions concerning the protection of human health at beaches were established in accordance with EPA recommended standard methods. The current QAPP includes sample collection techniques, analytical procedures, and data verification and validation processes. As outlined in the QAPP, coastal waters are analyzed for Enterococci bacteria. While the majority of samples are analyzed at CT DPH's Katherine Kelly Laboratory, some towns use their own State-certified environmental testing laboratories. Each laboratory utilizes analytical methods approved by EPA. In general, results are assessed in comparison to the state standard of 104 CFU/100 ml water and advisories are issued when appropriate. In addition, the director of health will consider 24-hour rainfall data and other local factors when deciding on bathing beach closures.

C5: Performance Criterion 5: Public Notification and Risk Communication Plan:

CT DPH has developed a comprehensive "Beach Closure and Notification" plan. This plan describes how the public will be notified of potential risks associated with water contact activities in coastal recreational waters, and describes the advisory process for issuing, re-sampling and removing advisories. Notification protocols are described within current QAPP. In summary, beach advisories are issued as soon as elevated results are received by CT DEEP staff or local Health Directors. Advisory information is relayed to beach managers who are asked to post signs at beach entrances. The advisory is also listed on the managing authority's telephone hot-line or web site. Once re-sample results are below state standards, the advisory is removed and the public is notified through the same channels as with the posting of the advisory.

C6: Performance Criterion 6: Measures to Notify EPA and Local Governments:

CT DPH has developed a mechanism for prompt notification of the EPA and local governments of the occurrence, nature, location, and pollutants involved when a violation of water quality standards for public beaches occurs. These methods also communicate the extent of exceedance or the likelihood of exceeding applicable state water quality standards for pathogen indicators. CT DPH works closely with 24 municipalities along the Long Island Sound shoreline and their 19 local health departments plus the CT DEEP to support the consistent use of statewide beach monitoring guidelines and beach closure protocol. CT DPH hosts meetings for public health officials to: promote standardized beach monitoring practices; provide updates; to review marine beach tracking data for the state; and provide a forum for US EPA and public health officials to discuss beach issues. The spring 2016 meeting with shoreline public health officials was held on May 13, 2016 at the Savin Rock Conference Center, West Haven, CT. Approximately 13 representatives from the 19 shoreline local health departments/districts attended the meeting. Presentations were given by Dr. Stewart Chute of the CT DPH Recreation Program, Kimberly Holmes-Talbot of the CT DPH Public Health Laboratory, and staff from the CT DEEP. A copy of the meeting agenda is found in Appendix A. Kim is responsible for training and reviewing sampling and testing procedures for Enterococci. In her presentation she provided an update on sample processing procedures and an overview of the data collection process.

C7: Performance Criterion 7: Measures to Notify the Public:

If it is necessary to close a State Beach, the CT DEEP Project Manager or designee contacts the CT DEEP Parks Division and CT DEEP Communications Office by telephone and email. They take appropriate actions to close state beaches and initiate the public notification process. Municipalities have their own notification procedures. (See Table A1) Communication of closure status at State beaches to the general public is presently accomplished by updating the CT DEEP web site and amending the State Beach "Hotline". Updates are the responsibility of CT DEEP Parks or Office of Communications personnel on the same day significant sample results are received from the CT DPH laboratory. The CT DEEP also issues press releases on the same day the laboratory results are received that are carried by area radio and television stations, and newspapers. Finally, the CT DPH immediately communicates the closure status of any State Beach with appropriate local health officials by telephone or email. A voice-mail message is recorded if direct contact is not made at any point in the above sequence. If the caller does not receive a call back within an hour to acknowledge the voice-mail, subsequent calls are made to alternative staff according to a predetermined sequence until an appropriate person is contacted directly. In addition, CT DEEP maintains a web site for public notification of State beach status (www.ct.gov/deep/beachstatus). CT DEEP is also using social media including Facebook and Twitter to provide updated information for selected facilities.

If the local director of health deems it necessary to close a bathing beach, the CT DPH is to be advised of such closure by telephone or fax as soon after the closure as possible but not later than 4-hours. The local health district/department is responsible for the notification of the general public by posting on a local municipality's website and/or via a press release to the local media.

C8: Performance Criterion 8: Notification Report Submission and Delegation:

States are required to report on activities taken to notify the public in the case of water quality standard exceedances, promptly report notification data to the public, and submit annual

notification data elements to the US EPA. All beach notification data were entered into CT DPH's Access database before the end of 2016. CT DPH submitted the 2016 notification data to US EPA on January 1st 2016. This data is available from US EPA's Beacon 2 website (<http://watersgeo.epa.gov/beacon2>).

C9: Performance Criterion 9: Public Evaluation of the Program:

Public evaluation of the CT DPH beach program is a continual process. The public has been provided with an opportunity to review the list of coastal recreational waters and associated public beaches, the tier designation of coastal public beaches, and yearly reports. All documents are displayed on the CT DPH website (www.ct.gov/dph/publicbeaches), and comments are requested. CT DPH also sends monitoring and notification data to selected public non-governmental organizations and other interested parties upon request.

D: Performance Measures

Connecticut’s monitored beaches were safe for swimming 97.7% of the 2016 swim season. Within the 72 monitored beaches, there were 157 closure days and 6 advisory days during the 91 day season. These totals are derived from 79 closure and 3 advisory events. Fifty-eight percent of all closures were due to elevated indicator bacteria, while preemptive closures were predominantly due to heavy rainfall. Table D1 shows these results along with other indices. Note that monitoring results include one closed public beach that is being monitored. Also, results do not include monitoring data from one of the 73 tracked beaches (Dubois Beach in Stonington) because no data was submitted for it.

Table D1: Summary Counts for Key Parameters from the 2016 Marine Beach Season.

<i>Parameter</i>	<i>Count</i>
Marine beaches tracked for the US EPA Beach Grant	73
Count of marine beaches monitored weekly during the bathing season	72
Reported marine beach Advisory Events	3
Reported marine beach Advisory Days	6
Reported marine beach Closure Events	79
Reported marine beach Closure Days	157
Total reported marine beach events (closure events and advisory events)	82
Total reported marine beach event days (closure days and advisory days)	163
Tier 1 marine beaches	54
Tier 2 marine beaches	9
Tier 3 marine beaches	10
Reported marine beach closure events due to elevated indicator bacteria	46
Reported marine beach closure events preemptive due to heavy rainfall	33
Reported marine beach recreational water quality monitoring samples	1826
Marine beach recreational water quality monitoring samples that exceeded 104 CFU/100ml	124
Marine beaches with one or more marine recreational water quality samples that exceeded 104 CFU/100ml	41

E: Beach Advisories and Outside Appraisal

CT DPH collects information on notification events from each of the twenty State and municipal agencies charged with monitoring marine beaches. CT DPH generates the survey forms and distributed them in October 2016. Survey forms were returned to CT DPH by the end of November 2016. Information on the survey was reviewed and compiled into a custom database. Notification data was then formatted and initially submitted to US EPA on December 9, 2016. During the 2016 sampling season, 83 coastal notification events were recorded (TableE1). These data have been distributed to outside agencies; including, the East Shore District Health Department and The Connecticut Council for the Environment.

Table E1: Connecticut Beach Advisories for the 2016 Swim Season. Notification data as reported to CT DPH by shoreline local health departments, health districts and CT DEEP. Data set is sorted by Town, Beach Name, and Event Start Date. If the municipal authority does not know the source of elevated bacteria, he/she reports “unknown” under the “SOURCE” column.

TOWN	BEACH NAME	EVENT TYPE	START DATE	DURATION (DAYS)	REASON	SOURCE
CLINTON	TOWN BEACH (CLINTON)	Close	07/07/2016	2	Elevated bacteria	Storm water runoff
CLINTON	TOWN BEACH (CLINTON)	Close	08/23/2016	2	Elevated bacteria	Storm water runoff
DARIEN	PEAR TREE POINT BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
DARIEN	WEED BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
EAST LYME	ROCKY NECK STATE PARK BEACH	Close	06/01/2016	1	Elevated bacteria	Unknown
GREENWICH	BYRAM BEACH	Close	05/30/2016	1	Preemptive - Rainfall	Storm water runoff
GREENWICH	BYRAM BEACH	Close	06/06/2016	1	Preemptive - Rainfall	Storm water runoff
GREENWICH	BYRAM BEACH	Close	07/05/2016	1	Preemptive - Rainfall	Storm water runoff
GREENWICH	BYRAM BEACH	Close	07/08/2016	1	Preemptive - Rainfall	Storm water runoff
GREENWICH	BYRAM BEACH	Close	07/26/2016	1	Preemptive - Rainfall	Storm water runoff
GREENWICH	BYRAM BEACH	Close	07/29/2016	1	Preemptive - Rainfall	Storm water runoff
GREENWICH	BYRAM BEACH	Close	08/12/2016	1	Preemptive - Rainfall	Storm water runoff
GREENWICH	BYRAM BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
GREENWICH	GREENWICH POINT BEACH	Close	08/12/2016	1	Preemptive - Rainfall	Storm water runoff
GREENWICH	GREENWICH POINT BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
MADISON	HAMMONASSET BEACH	Close	06/07/2016	1	Elevated bacteria	Unknown
MILFORD	SILVER SANDS BEACH	Close	07/06/2016	1	Elevated bacteria	Unknown
MILFORD	SILVER SANDS BEACH	Close	08/02/2016	2	Elevated bacteria	Unknown
MILFORD	SILVER SANDS BEACH	Close	08/23/2016	1	Elevated bacteria	Unknown

Table E1: Connecticut Beach Advisories for the 2016 Swim Season. (Continued)

TOWN	BEACH NAME	EVENT TYPE	START DATE	DURATION (DAYS)	REASON	SOURCE
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NORWALK	CALF PASTURE BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
NORWALK	HICKORY BLUFF BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Sewer Overflow
NORWALK	MARVIN BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
NORWALK	ROWAYTON BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
NORWALK	SHADY BEACH	Close	08/02/2016	1	Elevated bacteria	Unknown
NORWALK	SHADY BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
OLD SAYBROOK	HARVEY'S BEACH	Close	06/07/2016	2	Elevated bacteria	Storm water runoff
OLD SAYBROOK	TOWN BEACH (OLD SAYBROOK)	Close	06/07/2016	2	Elevated bacteria	Storm water runoff
STAMFORD	CUMMINGS BEACH	Close	05/30/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	CUMMINGS BEACH	Close	07/16/2016	1	Other	Wildlife
STAMFORD	CUMMINGS BEACH	Close	07/27/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	CUMMINGS BEACH	Close	08/12/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	CUMMINGS BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	EAST (COVE ISLAND) BEACH	Close	05/30/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	EAST (COVE ISLAND) BEACH	Close	07/26/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	EAST (COVE ISLAND) BEACH	Close	08/12/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	EAST (COVE ISLAND) BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	QUIGLEY BEACH	Close	05/30/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	QUIGLEY BEACH	Close	07/26/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	QUIGLEY BEACH	Close	08/12/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	QUIGLEY BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	WEST BEACH	Close	05/30/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	WEST BEACH	Close	07/26/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	WEST BEACH	Close	08/12/2016	1	Preemptive - Rainfall	Storm water runoff
STAMFORD	WEST BEACH	Close	08/22/2016	1	Preemptive - Rainfall	Storm water runoff
STRATFORD	LONG BEACH (MARNICK'S)	Advisory	07/08/2016	2	Preemptive - Rainfall	Unknown
STRATFORD	LONG BEACH (PROPER)	Advisory	07/08/2016	2	Preemptive - Rainfall	Unknown
STRATFORD	SHORT BEACH	Advisory	07/08/2016	2	Preemptive - Rainfall	Unknown
STRATFORD	SHORT BEACH	Close	08/01/2016	3	Elevated bacteria	Unknown

Table E1: Connecticut Beach Advisories for the 2016 Swim Season. (Continued)

TOWN	BEACH NAME	EVENT TYPE	START DATE	DURATION (DAYS)	REASON	SOURCE
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WEST HAVEN	ALTSCHULER BEACH	Close	06/06/2016	3	Elevated bacteria	Unknown
WEST HAVEN	ALTSCHULER BEACH	Close	07/28/2016	3	Elevated bacteria	Unknown
WEST HAVEN	ALTSCHULER BEACH	Close	08/15/2016	3	Elevated bacteria	Unknown
WEST HAVEN	DAWSON BEACH	Close	07/06/2016	3	Elevated bacteria	Unknown
WEST HAVEN	DAWSON BEACH	Close	08/01/2016	3	Elevated bacteria	Unknown
WEST HAVEN	DAWSON BEACH	Close	08/15/2016	3	Elevated bacteria	Unknown
WEST HAVEN	DAWSON BEACH	Close	08/17/2016	3	Elevated bacteria	Unknown
WEST HAVEN	MORSE BEACH	Close	08/15/2016	3	Elevated bacteria	Unknown
WEST HAVEN	OAK STREET A BEACH	Close	07/28/2016	3	Elevated bacteria	Unknown
WEST HAVEN	OAK STREET A BEACH	Close	08/15/2016	3	Elevated bacteria	Unknown
WEST HAVEN	OAK STREET B BEACH	Close	05/31/2016	3	Elevated bacteria	Unknown
WEST HAVEN	OAK STREET B BEACH	Close	08/01/2016	3	Elevated bacteria	Unknown
WEST HAVEN	OAK STREET B BEACH	Close	08/15/2016	3	Elevated bacteria	Unknown
WEST HAVEN	ROCK STREET BEACH	Close	05/31/2016	3	Elevated bacteria	Unknown
WEST HAVEN	ROCK STREET BEACH	Close	07/18/2016	3	Elevated bacteria	Unknown
WEST HAVEN	ROCK STREET BEACH	Close	08/01/2016	3	Elevated bacteria	Unknown
WEST HAVEN	ROCK STREET BEACH	Close	08/15/2016	3	Elevated bacteria	Unknown
WEST HAVEN	ROCK STREET BEACH	Close	08/17/2016	3	Elevated bacteria	Unknown
WEST HAVEN	ROCK STREET BEACH	Close	08/29/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEABLUFF BEACH	Close	06/06/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEABLUFF BEACH	Close	07/25/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEABLUFF BEACH	Close	08/01/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEABLUFF BEACH	Close	08/15/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEABLUFF BEACH	Close	08/22/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEAVIEW BEACH	Close	05/31/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEAVIEW BEACH	Close	06/06/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEAVIEW BEACH	Close	06/27/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEAVIEW BEACH	Close	07/06/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEAVIEW BEACH	Close	08/01/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEAVIEW BEACH	Close	08/10/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEAVIEW BEACH	Close	08/15/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEAVIEW BEACH	Close	08/22/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SEAVIEW BEACH	Close	08/24/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SOUTH STREET BEACH	Close	08/01/2016	3	Elevated bacteria	Unknown
WEST HAVEN	SOUTH STREET BEACH	Close	08/15/2016	3	Elevated bacteria	Unknown

APPENDIX SECTION

Appendix A: Spring Meeting Agenda.

CONNECTICUT BEACH GRANT MEETING FOR COASTAL HEALTH OFFICIALS Friday May 13, 2016

*Savin Rock Conference Center
6 Rock Street, West Haven, CT
(203) 937-3680*

AGENDA

9:00 - 9:15	Stewart Chute, DPH	Welcome
9:15 - 9:45	Kimberly Holmes-Talbot, DPH	The State Laboratory and summer beach monitoring
9:45 - 10:05	Stewart Chute, DPH	Beach Grant annual report
10:05 - 10:20	Break	
10:20 - 11:10	Chris Bellucci/Tracy Lizotte, DEEP John Cimchowski, DEEP	Freshwater Cyanobacteria Monitoring State Park beaches
11:10 - 11:30	Stewart Chute, DPH	Update on Rec. Water Conference: Coliphage
11:30 - 11:45	All	Q & A / Adjourn

Connecticut Department of Public Health, Recreation Program
Stewart Chute, Toxicologist, (860) 509-7758

Appendix B: Fourteen year summary data.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Count of marine beaches tracked for the US EPA Beach Grant	67	67	67	67	66	66	66	66	73	73	73	73	74	73
Count of marine beaches monitored weekly during the bathing season	65	65	65	63	64	66	65	65	72	72	72	72	72	72
Count of reported marine beach Advisory Events	19	2	7	1	1	1	1	1	16	28	12	3	4	3
Count of reported marine beach Advisory Days	28	7	69	2	1	30	2	3	101	191	52	6	5	6
Count of reported marine beach Closure Events	115	95	86	106	65	66	74	66	152	68	66	65	50	79
Count of reported marine beach Closure Days	179	176	131	222	107	105	106	140	535	107	99	111	70	157
Count of total marine beach events (closure events and advisory events)	134	97	93	107	66	67	75	67	168	96	78	68	54	82
Count of total marine beach event days (closure days and advisory days)	207	183	200	224	108	135	108	143	636	298	151	117	75	163
Count of Tier 1 marine beaches ¹	46	43	41	46	54	54	49	52	29	55	57	53	57	54
Count of Tier 2 marine beaches ¹	6	11	15	8	7	4	10	11	27	12	11	14	14	9
Count of Tier 3 marine beaches ¹	15	13	11	13	5	8	7	3	17	6	5	6	3	10

Count of marine beach closure events due to elevated indicator bacteria	18	13	15	18	8	13	9	37	49	12	17	18	13	46
Count of preemptive closure events (usually due to heavy rainfall)	89	77	70	81	54	53	65	27	95	56	47	47	37	33
Number of reported marine beach recreational water quality monitoring samples	966	1086	1129	1385	1682	1636	1962	2213	2051	1953	1806	1787	1864	1826
Number of marine beach recreational water quality monitoring samples that exceeded the US EPA standard of 104 CFU/100ml for marine recreational water	51	62	47	75	89	73	93	261	235	156	112	108	74	124
Number of marine beaches with one or more marine recreational water quality samples that exceeded the US EPA standard of 104 CFU/100ml for marine recreational water	16	18	14	29	39	28	33	55	58	44	40	30	30	41

Appendix C: EPA's Reply to Connecticut's Justification to Maintain Its Current Beach Action Values



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109 3912

June 22, 2016

Ronald Skomro
Environmental Health Section, Recreation Program
Connecticut Department of Public Health
410 Capitol Avenue, MS#51AIR
P.O. Box 340308
Hartford, CT 06134-0308

RE: Justification for Alternate Beach Notification Threshold

Dear Ron,

We have reviewed your justification for use of an Alternate Beach Notification Threshold (BNT) dated May 6, 2016 and approve your request to continue using the alternate Beach Notification Threshold (BNT) of 104 cfu of Enterococci at Connecticut beaches. This decision is based on your analysis of historical data in Connecticut. If at any point in the future you decide to use the EPA-recommended BAVs or a different BNT, please contact your project officer.

Thank you!

Sincerely,

Handwritten signature of Ann Rodney in blue ink.

Ann Rodney,
Project Officer, CT Beach Program

Handwritten signature of Alicia Grimaldi in blue ink.

Alicia Grimaldi,
Region 1 Beach Program Coordinator

END OF ANNUAL REPORT