REAUTHORIZATION OF THE BEACHES ENVIRONMENTAL ASSESSMENT AND COASTAL HEALTH ACT

(110–59)

HEARING

BEFORE THE

SUBCOMMITTEE ON
WATER RESOURCES AND ENVIRONMENT

OF THE

COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

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U.S. House of Representatives
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July 5, 2007

MEMORANDUM

TO: Members of the Subcommittee on Water Resources and Environment

FROM: Subcommittee on Water Resources and Environment Staff

RE: SUMMARY OF SUBJECT MATTER: Hearing on "Reauthorization of the Beaches Environmental Assessment and Coastal Health Act"

Purpose of the Hearing

On July 12, 2007, at 2 p.m., the Subcommittee on Water Resources and the Environment will hold a hearing on beach water quality and the reauthorization of the Beaches Environmental Assessment and Coastal Health Act, more commonly known as the BEACH Act. The Subcommittee will receive testimony from the Environmental Protection Agency ("EPA"), representatives of State environmental protection and public health agencies, local government, and other interested stakeholders.

Background

The nation is fortunate to have nearly 23,000 miles of ocean shoreline along the continental Unites States, more than 5,500 miles of Great Lakes shoreline, and 3.6 million miles of rivers and streams. Beaches are an important part of the complex and dynamic coastal watershed, providing numerous recreational opportunities for millions of people, including boating, fishing, swimming, beachcombing, bird-watching, and sunbathing.

Each year over 180 million people visit our nation's coastal and Great Lakes waters for recreational purposes. This activity supports over 28 million jobs and leads to investments of over $50 billion in goods and services. It is important to give the public confidence in the quality of our nation's coastal recreational waters. This confidence is important not only to each citizen who swims or surfs, but also to the tourism and recreation industries that rely on safe and swimmable coastal waters.

According to a recent EPA report, over the past 50 years, epidemiological studies and investigations following widespread waterborne illnesses have linked swimming in polluted water with adverse health effects. Swimming-related diseases can range from less severe gastrointestinal diseases (e.g. sore throats and diarrhea) and non-gastrointestinal diseases (e.g. respiratory, ear, eye, and skin infections) to more serious illnesses, such as meningitis or hepatitis.

On October 10, 2000, the Beaches Environmental Assessment and Coastal Health Act ("BEACH Act") was signed into law. This legislation, which amends the Federal Water Pollution Control Act ("Clean Water Act"), was introduced to limit and prevent human exposure to polluted coastal recreation waters (including those along the Great Lakes) by assisting states and local governments to implement beach monitoring, assessment, and public notification programs. For these purposes, the BEACH Act authorized $30 million annually for fiscal years 2001 through 2005.

In addition, the BEACH Act required states and tribes with coastal recreation waters to adopt minimum water quality standards for pathogens and pathogen indicators by April 10, 2004, and directed EPA to promulgate standards for states that failed to establish standards as protective of human health as EPA's criteria – the 1986 Ambient Water Quality Criteria for Bacteria.

Finally, the BEACH Act required EPA to conduct additional studies associated with pathogens and human health and to publish new or revised water quality criteria for pathogens and pathogen indicators within five years of enactment of the BEACH Act (October 10, 2005), based on the results of these studies. EPA is also directed to review these revised water quality criteria every five years, and to revise the criteria, as necessary, to protect human health. In addition, States are directed to adopt any revised water quality criteria within three years of publication by EPA.

Implementation of the BEACH Act

Beach Act Funding

From 2001 through 2007, the BEACH Act has authorized nearly $62 million in grant funding to the 35 states with coastal recreation waters to support the implementation of coastal recreation water monitoring and notification programs. According to EPA, states are using the grant funds to implement beach monitoring and notification programs that are consistent with national guidance. Using BEACH Act grant funding, states collect and analyze water samples to determine whether local recreation waters exceed (or are likely to exceed) water quality standards for public health protection, and to notify the public if water quality standards are exceeded (or likely to be exceeded).

EPA awards grants to the 35 eligible states using an allocation formula developed by the Agency in 2002. According to EPA, this allocation formula was developed in consultation with the states and other stakeholders, and uses three factors – beach season length, beach miles, and beach usage – to determine an equitable allocation of funds. However, because in 2002, data for beach miles and beach usage were not readily available, shoreline length and coastal population were used as surrogates.

State Water Quality Standards

Prior to the enactment of the BEACH Act, only 16 states with coastal recreation waters had adopted EPA's 1986 criteria for pathogens and pathogen indicators in coastal recreation waters, and incorporated these into their water quality standards. Other states were either using water quality criteria older than the 1986 criteria or no water quality criteria at all.

Since enactment of the BEACH Act, all 35 states with coastal recreation waters have adopted criteria for pathogens and pathogen indicators that are at least as protective of human health as EPA's 1986 criteria. According to EPA, thirteen states adopted these criteria voluntarily, and the remaining 21 states and territories were included in a November 16, 2004 EPA rulemaking to adopt water quality standards consistent with EPA's 1986 criteria.

Water Quality Criteria and Standards

Section 304(a) of the Clean Water Act directs EPA to establish water quality criteria for all waters and uses, including human health criteria for recreational uses of coastal waters. Federal water quality criteria serve as guidance to States and Tribes in adopting and revising State and Tribal water quality criteria and water quality standards under section 303 of the Clean Water Act. Under current Clean Water Act regulations, States and Tribes may adopt the Federal criteria as their own, may modify the Federal criteria to reflect site-specific conditions, or may base their water quality criteria on other scientifically defensible methods. 40 C.F.R. 131.11(b)(1).

According to EPA, the Agency's current criteria for pathogen and pathogen indicators are based on a series of studies conducted by EPA in the late 1970s and early 1980s. In 1986, EPA recommended the use of indicator organisms as a good predictor of potential waterborne illness in water – enterococci for fresh and marine waters, and E. coli in freshwater.

However, during consideration of the BEACH Act, the Committee on Transportation and Infrastructure was concerned that the 1986 revised bacteria criteria were inadequate indicators for determining the human health risk from all microorganisms, including viruses or other pathogens such as giardia or cryptosporidium. The Committee noted, during a 1998 hearing on this issue, that EPA's 1986 criteria needed to be updated to improve the scientific basis for identifying pathogens in coastal recreation waters that were potentially harmful to human health.

In response, the BEACH Act directed the Administrator of EPA to conduct additional studies on revised criteria for coastal recreation waters, as well as newer, accurate, and expeditious testing methods for detecting the presence of pathogens that are harmful to human health. Section 304(a) of the Clean Water Act was amended to direct the Administrator to develop and publish new or revised water quality criteria for coastal recreation waters for the purpose of protecting human health within five years of enactment

of the BEACH Act (October 10, 2005), and to review, and revise if necessary, these water quality criteria every five years thereafter.

NRDC Lawsuit

On August 3, 2006, the Natural Resources Defense Council ("NRDC") filed a lawsuit against EPA for failure to publish new or revised water quality criteria for pathogens and pathogen indicators (including a revised list of testing methods, as appropriate) ... for the purpose of protecting human health in coastal recreational waters" by October 10, 2005, as required by section 304(a) of the Clean Water Act, as amended by the BEACH Act.

On March 23, 2007, a United States District Court judge held that EPA had violated its non-discretionary duty to publish new or revised criteria by the October 2005 deadline, in violation of the Clean Water Act. The Court directed NRCS and EPA to discuss the issue of the appropriate amount of time EPA would have to complete publication of new or revised water quality criteria for pathogens and pathogen indicators. These discussions are still underway.

GAO Report

The Government Accountability Office (GAO) released a report in May 2007 titled '*Great Lakes: EPA and States Have Made Progress in Implementing the BEACH Act, but Additional Actions Could Improve Public Health Protection.*' The GAO found that EPA has implemented most provisions of the BEACH Act, including developing a national list of beaches and improving uniformity of state water quality standards. However, GAO reported that EPA had neither completed the pathogen or human health studies that had been required by 2003, nor published the new or revised water quality criteria required by 2005. GAO also found that the formula EPA used to distribute approximately $51 million in BEACH Act grants from 2001 to 2006 did not accurately reflect the monitoring needs of states. In addition, GAO found that among the Great Lakes states, state monitoring and state and local notification programs showed widespread variance in how often beaches were monitored, the monitoring methods used, and how the public was notified of potential health risks. GAO noted that the water quality monitoring has increased along Great Lakes beaches since passage of the BEACH Act, but that the causes of beach and water contamination often remain unknown and unaddressed. State and local officials told GAO that they do not have the available funding to investigate and address contamination sources.

GAO recommended that EPA distribute its BEACH Act grant funds so that they reflect states' monitoring needs and help to improve consistency of monitoring and notification activities. GAO also recommended that Congress should consider providing EPA with more flexibility to allow states to use BEACH Act grants to investigate and remediate contamination sources.

Pending Legislation

In the 110th Congress, three bills have been introduced to reauthorize appropriations for the BEACH Act.

H.R. 723, introduced by Congressman Bishop (NY), extends the authorization of appropriations for the BEACH Act through 2012, including authorization of $30 million annually for grants to states with coastal recreation waters for development and implementation of programs for water quality monitoring and notification.

H.R. 909, the Safe Water Improvement and Modernization Act of 2007, was introduced by Congressman Bilbray. This legislation also extends the authorization of $30 million annually for the BEACH Act through 2012. In addition, H.R. 909 directs EPA to conduct a study on the benefits of using molecular diagnostics to accelerate the time necessary for obtaining test results on coastal water quality monitoring, and to report to Congress within 3 years on the results of this study.

H.R. 2537, the Beach Protection Act of 2007, was introduced by Congressman Pallone. This legislation also extends the authorization of appropriations for the BEACH Act through 2012, but increases the authorization of appropriations for grants for state water quality monitoring and notification from $30 million annually to $60 million.

HEARING ON REAUTHORIZATION OF THE BEACHES ENVIRONMENTAL ASSESSMENT AND COASTAL HEALTH ACT

Thursday, July 12 2007

HOUSE OF REPRESENTATIVES,
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT,
Washington, DC.

The subcommittee met, pursuant to call, at 2:00 p.m., in Room 2167, Rayburn House Office Building, the Honorable Eddie Bernice Johnson [chairman of the subcommittee] presiding.

Ms. JOHNSON. I call the Subcommittee to order.

Today, we meet to gather diverse opinions and expert analysis on reauthorization of the Beaches Environmental Assessment and Coastal Health Act or the BEACH Act. First signed into law October 2000, the BEACH Act has provided States, local governments and tribes funding for the assessment, analysis and public notification programs that monitor our coastal waters.

Although each beach and each coastal or Great Lakes shoreline may look pristine, the water quality may be unsafe for human contact. The BEACH Act sought to advance three separate goals: making beach water quality monitoring mandatory, making water quality criteria universal and making sure that the public was well informed on the quality of water that they would be using for swimming, fishing or other recreational activities.

Our Country's beaches are far from insignificant. With over 28,000 miles of coastal and Great Lakes shoreline, over 150 million tourists each year seek out a spot on a beach for recreational purposes. At a time when parents bemoan that their children are too focused with computers, video games and television to get proper outside exercise, beaches provide lush scenery and draw people of all ages to the shore for water sports, boating, birdwatching and relaxation.

Without monitoring the quality of water, however, our Country faces sizeable public health concerns. Waterborne pathogens and bacteria can cause illness to all who make contact with the water. Children and the elderly are especially susceptible to the sore throats, severe infections, meningitis, hepatitis that come from swimming, fishing or boating in polluted water. Each beach visitor should be informed that risk could be involved if they choose to immerse themselves in water.

By authorizing nearly $62 million in grant funding from 2001 to 2007 to all 35 States with coastal or Great Lakes shoreline, the

BEACH Act has supported universal criteria for beach monitoring assessments and public notification programs.

Although we have made great strides in protecting the public from unsafe waters, the programs have been far from perfect. A GAO report that was released several weeks ago reported that the Environmental Protection Agency has not completed the pathogen or human health studies that were required by the Act nor has it published a new or revised water quality standard.

In addition, the BEACH Act grants have not been disbursed by needs as one would think would be the most efficient. Monitoring varies by beach and by State, and State and local officials informed the GAO that they do not have enough funding to address contamination sources.

Three of our colleagues have introduced various takes on the reauthorization of the BEACH Act this Congress. My colleague from the Committee, Congressman Bishop, as well as Congressman Pallone and Congressman Bilbray, each has taken a keen interest in trying to find the most viable solutions to protecting our shore waters. I appreciate your efforts.

I welcome the witness panel today and look forward to your testimony.

I now ask the gentleman from Louisiana for a statement.

Mr. BAKER. Thank you, Madam Chairman. I appreciate your willingness to call this hearing and direct attention to this most important matter.

Preservation of recreational assets is extremely important and the numbers of individuals who press to the coast or to inland river beaches across the Country are enormous. Monitoring and taking action to correct or notify individuals of potential hazards is an extraordinarily important activity for this Congress to authorize.

Certainly, technology enables us to do more in a more cost-efficient manner than ever possible, but clearly there is much work to be done. Distribution of the grants on a rational basis is certainly a high priority of this Committee's work.

I look forward to hearing from the distinguished panel of witnesses we have scheduled for the afternoon and certainly from our colleagues who have keen and direct interest in this matter who I am sure will bring their own area of expertise to the subject.

With that, I yield back, Madam Chair.

Ms. JOHNSON. Thank you very much.

The Chair now recognizes Mr. Bishop.

Mr. BISHOP. Thank you, Madam Chair, and thank you for holding this hearing and inviting these distinguished members, local elected officials including my good friend from the town of Southampton, the Supervisor Skip Heaney, and members of the environmental community.

My district encompasses well over 300 miles of coastline, and I am very proud to represent some of this Country's most beautiful and popular beaches. Maintaining coastal health is an integral objective towards preserving the Nation's environment and sustaining the tourist economies of our States. The beach-going public that flocks to our Nation's shores this summer reminds us that we deserve pristine waterways to enjoy with our families and the need to preserve them for future generations of Americans.

The water quality monitoring and notification grants established in the BEACH Act have been absolutely necessary in protecting the health of beach-goers on our shores. Today, with this discussion, we can continue to assure the American public that preserving healthy shores is a priority of our environmental agenda.

In the 109th Congress, with the help of Mr. Pallone and Mr. LoBiondo and others, I introduced legislation to reauthorize the BEACH Act for an additional four years. This legislation passed through this Committee, passed the House but stalled in the Senate.

Earlier this year, I reintroduced similar legislation, H.R. 723, with the help of Mr. LoBiondo, Mr. Bilbray and several other members of this Committee to renew the discussion of how we can continue to protect our Nation's beaches.

After recent reports marked progress but raised questions about the implementation of the BEACH Act, it has become clear that further development of the BEACH Act is needed. That is why Mr. Pallone, the author of the original BEACH Act, and I decided to pool our resources to advance better legislation to fix problems and fund grant programs.

Mr. Pallone will address the Committee shortly about how to fund the program for an additional four fiscal years and how to solve many of the obstacles and challenges that have become apparent as this program is implemented.

Under the Clean Water Act, EPA is tasked with publishing water quality criteria that alerts officials to human health risks, setting a regulatory floor that States must meet. The original BEACH Act amended the Clean Water Act to require 35 eligible States to update recreational water quality standards using EPA's 1986 model and authorizing $150 million to do so.

The BEACH Act also required EPA to develop rapid pathogen tests by 2003 and publish new criteria by 2005, neither of which has been issued by the EPA.

In the recent report released by the GAO on the BEACH Act, the EPA is criticized for failing to publish water quality criteria for pathogens and failing to meet the 2003 deadline for studies on pathogens and human health. This report makes it obvious that there are problems in need of a solution, and it is most likely not limited to the Great Lakes region but has national implications which is why I now support H.R. 2537.

I hope my colleagues agree that the BEACH Act is an excellent example of an effective government program that benefits communities in every region of the Country and has yielded tremendous progress in restoring healthy shores.

Madam Chairwoman, with your leadership and support, the Water Resources Subcommittee can ensure that beach visitors throughout the Country are assured that local governments have all of the resources they need to monitor recreational waters and alert the public of potential health hazards. To that end, I look forward to working with you and thank you for your consideration of our request.

Thank you. I yield back the balance of my time.

Ms. JOHNSON. Thank you very much, Congressman.

Congressman LoBiondo.

Mr. LOBIONDO. Yes, Madam Chair, thank you very much. Thank you for holding this hearing today. I just have a very brief statement.

Over 30 years ago, my home State of New Jersey became one of the first State's in the Nation to regularly test water quality in its over 300 public beaches and notify the public of disclosure. I am very proud that New Jersey's program became a model for the nationwide program that we set up under the Beach Act.

Thanks to the BEACH Act, New Jersey has recovered over $1.4 million to further strengthen their existing program. The grants are helping to protect the millions of people that visit our 127 miles of coastline every year and our $31 billion tourist industry.

I am disappointed the Senate failed to pass our reauthorization of this critical program in the last Congress, but I look forward to working with you, Madam Chair, and the Committee to quickly move legislation to reauthorize and improve the BEACH Act.

I thank you very much.

Ms. JOHNSON. Thank you very much.

We are pleased to have two very distinguished members for our first panel here this afternoon. First, we have the Honorable Frank Pallone, Jr. of New Jersey's Sixth Congressional District, and we have the Honorable Brian Bilbray of California's 50th Congressional District, who also appeared yesterday. From the way he described his problem, he will use every penny authorized if he can get it.

We are pleased you were both able to make it this afternoon, and your full statements can be placed in the record. We ask that you try to limit your testimony to five minutes oral in a summary.

We will continue to proceed in the order in which the witnesses are listed in the call of the hearing, and I will now recognize Congressman Pallone.

TESTIMONY OF THE HONORABLE FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. Thank you, Chairwoman Eddie Bernice Johnson. I really appreciate the fact that you are having this hearing today. This is obviously a bill that is very important to us and anyone who lives or works along the coast.

I also want to thank our Ranking Member Baker as well.

I want to specifically recognize Mr. Bishop from Long Island for his leadership on this issue. Our two offices have worked together in crafting what I believe is the most comprehensive beach protection legislation in our Nation's history.

Our Nation's beaches are vital not only to residents of our coastal States but also for countless visitors who come to visit each year. In New Jersey alone, beaches are the primary driver of a tourism economy that provides nearly 500,000 jobs and generates $36 billion in economic activities for the State each year. I think the main thing is that we would like Congress to assure beach-goers that our Nation's beaches are clean and safe.

Now the 2000 BEACH Act which has already been discussed, thanks to that, we have made major strides over the last six years.

That Act helped us improve water quality testing and monitoring of beaches across the Country.

The Act basically had three provisions: requiring States to adopt current EPA water quality criteria to protect beach-goers from getting sick, requiring the EPA to update these water quality criteria with new science and technologies to provide better, faster water testing and finally providing grants to States to implement coastal water monitoring programs.

My home State of New Jersey used some of this grant money to become the first State to launch a real-time web site that notifies beach-goers of the state of our beaches.

Now the bill that is before you, the Beach Protection Act, is basically an improvement over the 2000 Beach Act, and that is what Mr. Bishop and I had in mind when we introduced the bill. It would go further to ensure that beach-goers throughout the Country can surf, swim and play on clean and safe beaches.

The legislation not only reauthorizes the BEACH Act grants to States through 2012, but it also doubles the annual grant levels from $30 million under the old authorization to a new level of $60 million annually. It also expands the scope of those grants from water quality monitoring and notification to also include pollution source tracking and prevention efforts.

Most importantly, the legislation goes further on environmental standards than ever before by requiring tougher standards for beach water quality testing and communication. The bill requires that beach water quality violations are disclosed not only to the public but to all relevant State agencies with beach water pollution authority.

Now I wanted to just stress the rapid testing methods. The new bill mandates the use of rapid testing methods by requiring the EPA to approve the use of testing methods that detect beach bathing water contamination in two hours or less. The problem is in the past it would take up to 48 hours after the test was done to get the results. Then the beach would be closed two days later, but in the meantime people would be swimming in contaminated waters.

Then vice versa, when the testing showed that the beaches could be opened again, it would take two days before the beaches would be open even though they were safe for those two days. From a tourism point of view, obviously, that is not good.

So we have been advocating for several years—I say myself, Mr. Bilbray, Mr. Bishop—that we use these new standards that basically test that would allow you to get the results in two hours or less. I don't have to tell you why that is a good thing.

In addition, we are requiring each State receiving the BEACH grants to implement measures for tracking and identifying sources of beach water pollution, creating a public online database for each beach with relevant pollution and closure information posted and, third, ensuring that closures or advisories are issued shortly after the State finds coastal waters out of compliance with water quality standards or within 24 hours of failed water quality tests.

We are also holding States accountable by requiring the EPA Administrator to do annual reviews of grantees' compliance with the BEACH Act's process requirements. Grantees have one year to comply with the new environmental standards or they will be re-

quired to pay at least a 50 percent match for their grant until they come back into compliance.

I just want to say in closing, this is a very important bill. I think it will make even further strides towards our goal of clean beaches, clean water, swimmable waters which, of course, has always been the goal of the Clean Water Act.

Once again, I want to thank the Chairwoman and the Ranking Member and, of course, Mr. Bishop for holding this hearing and for putting this legislation together.

I also don't want to fail to mention that one of your witnesses is Lisa Jackson who is our New Jersey Commissioner of the Department of Environmental Protection. She has been a leader on cleaning up the beaches, cleaning up coastal water quality and basically protecting our coastal areas. So I also appreciate the fact that you have her as one of your witnesses today.

Thank you.

Mr. BISHOP. [Presiding] Mr. Pallone, thank you very much for your testimony.

Mr. Bilbray.

TESTIMONY OF THE HONORABLE BRIAN P. BILBRAY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. BILBRAY. Thank you, Mr. Chairman.

Mr. Chairman, first of all, let us talk about what is really important in this world.

So, first of all, I would like to ask you to thank the Madam Chair for holding the hearing today rather than tomorrow. Because you are holding the hearing at this time, I will be able to be in the water, surfing in California at noon Pacific Standard Time tomorrow. Some people may think it is recreation. It is a cultural and religious mandate for those of us along the California coastline.

Seriously though, I feel like I practically ought to pull up a chair here because we were here earlier this week, talking, Bob Filner and I, about the problems of international pollution and those relationships.

In my neighborhoods where I grew up, for over 50 years, we have had posting of beaches. We have had the testing. Frankly, as a former mayor and county supervisor—and in California, the county supervisors are the ones who supervise the water quality testing along all the beaches in California—I just sort of took it for granted that everybody did that though I am reminded by my wife who is also, Mr. Baker, a native of New Orleans, that there are places where they don't dare test the water. The fact is it was just a shock for me when I came here to realize that the rest of the world didn't live up to that standard.

Mr. Chairman, I just want to point out, now I think the history of the BEACH bill, I was privileged to be able to work with Mr. Pallone, Surfrider and other environmental groups at trying to do this cooperative effort of Federal and State agencies and local agencies, but the real success is dependent on the local communities being involved and integrated into this, and I think if you look at where things have not worked out with the BEACH bill, it has not been on those who were the county supervisors and those who were

mayors. It has been that Washington never does quite live up to its expectations, and we have got to remember that if we are going to be successful in the future, it is through the cooperative effort of local communities who have the true vested interest at what happens on their beaches actually being empowered to the right thing and Washington being in a support mode, not necessarily in the direction mode on this. I really want to point that out very, very strongly.

But let me say on the flip side is the real-time testing is essential. As the gentleman from New Jersey pointed out, it is actually worse than what some people think. In California, we do not hedge the bet. If there is an incident, if there is rain in California, we post our beaches immediately until the test comes out that it is clean. So what happens is the young people, those of us who are surfers, after a rain, we don't know if it is closed or not. The red signs are up, but we assume that it is probably still clean, that they are just being safe. So a lot of people go into the water with the red signs up because we do not have real-time testing. It takes about two to three days. That two to three days, if the signs are still up two or three days, then almost you start thinking, well, maybe it is polluted.

We need to give credibility to those signs by having real-time testing. I think that is an essential part of this. That is why I have asked that even in my district that we take a portion of these and actually do these tests and develop these tests to be able to have real-time detection. I think that is an essential part of this issue, so that when a red sign goes up, when the pollution sign goes up, those of us who are water users know that that really means that the test came up positive, not that the test might come up positive in three days. I think from the public health point of view, we cannot overstate how real-time testing is absolutely essential for the future.

I think that with all the talk of bipartisan support and cooperative efforts, this bill is a good example that it was borne and bred of bipartisan cooperation. It grew in the environment of local, State and Federal cooperation. Keep that spirit, keep it moving, and I think we will be able to make sure that our children are protected and our beaches are clean.

It is a nice thing for me as a legislator to see my son and daughter on the internet, checking out the surf on the internet rather than driving to beaches to look at it but also on the internet, being able to know what the water quality testing has been over a period of time, that the young people are making the internet and this information source part of their daily routine and enjoying our water resources. I think that is a great legacy that we can leave for the future.

If we continue to work together, not just here in Washington but especially with those mayors and those county supervisors and those State officials who are actually going to be our agents in our neighborhoods, protecting our environment.

I thank you for the time, Mr. Chairman.

Mr. BISHOP. Mr. Bilbray, thank you very much for your testimony.

Mr. Pallone, thank you for your testimony. Our custom is to not ask members to stay for questioning so that you can get on with your day.

Mr. BAIRD. Mr. Chairman, could I deviate from that custom for one moment?

Mr. BISHOP. Certainly.

Mr. BAIRD. I would just ask Mr. Bilbray, you mentioned that surfing is religion. Do we have a religious symbol here in our presence.

Mr. BILBRAY. Yes, we do.

Mr. BAIRD. I observe that we often get bored in hearings. This is the first time we have gotten a board in a hearing. We appreciate your testimony.

[Laughter.]

Mr. BILBRAY. When you hear about in San Diego, we are having board meetings, it is usually out in the waves. We don't sit in them. We are not going to ask you to bow before our religious symbol this time, but thank you very much and I appreciate the chance to participate.

Mr. BISHOP. Thank you both very much.

We will now move to the second panel.

Our second panel this afternoon will consist of the Honorable Benjamin Grumbles, the Assistant Administrator for the Environmental Protection Agency's Office of Water and a frequent visitor to our Committee. We will next have the Honorable Lisa Jackson, Commissioner of New Jersey's Department of Environmental Protection, and finally we will have the Honorable Patrick Skip Heaney, supervisor of my home town of Southampton, New York.

For each of you, we will place your full statements in the record, and we ask that you try to limit your verbal testimony to about five minutes.

Mr. Grumbles, we will begin with you.

TESTIMONY OF THE HONORABLE BENJAMIN H. GRUMBLES, ASSISTANT ADMINISTRATOR FOR THE OFFICE OF WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY, WASHINGTON, D.C.; THE HONORABLE LISA JACKSON, COMMISSIONER, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, TRENTON, NEW JERSEY; THE HONORABLE PATRICK SKIP HEANEY, TOWN SUPERVISOR, SOUTHAMPTON TOWN BOARD, SOUTHAMPTON, NEW YORK

Mr. GRUMBLES. Thank you very much, Mr. Chairman. As always, it is an honor to appear before the Subcommittee.

EPA has a lot to be proud of, as do the States and coastal communities, in the progress that has been made since the Beach Act of 2000, and your Committee has a lot to be proud of too. I was here, and I remember the pride that the members took in enacting that landmark legislation.

My testimony today on behalf of EPA is to emphasize not just where we have been and what we are currently doing but also some of the cutting edge science in the areas where we can continue to make progress and to accelerate the progress in implementing the Beach Act.

Mr. Chairman, there are three basic areas in the primary focus of our efforts in our clean beaches plan and implementing with our State partners, the Beach Act.

The first is sound science, and there will be a lot of conversation in this hearing about the importance of getting that sound science foundation as we explore rapid methods and identify the best indicators for pathogens so that we can continue to make progress. The Agency is committed to continuing to invest in the sound science to carry out the studies, the epidemiological studies, the other types of scientific analyses to get the methods, the rapid methods adopted and validated so that we have rapid and reliable reporting.

That leads me to the second principle, the key cornerstone of the Act and of the EPA's efforts, and that is awareness, public notification. The Act authorized grants from EPA to the States for beach water quality monitoring and also public notification.

Then the third important component is pollution prevention, and that is where as we all turn our attention to beach water quality both in terms of the sound science, the water quality criteria and standards and also the public awareness and notification, that is where we can also look to the permitting programs, the TMDL planning procedures, look upstream and take important steps to reduce the amount of overflows, the stormwater problems and plan accordingly.

What I would like to do in the remaining amount of time, Mr. Chairman, is to focus on some key areas. Let us not lose sight of these important accomplishments. Over the last six years, we have seen the number of beaches go from 1,000 to over 3,500 that are monitored and assessed under the Beach Act. That increased monitoring and awareness leads to action.

Another major accomplishment based on EPA's actions pursuant to the Beach Act in late 2004 was that we promulgated for 21 States what we viewed as more protective water quality criteria and standards to help the progress in moving away from the older criteria of fecal coliform to the more important and I think protective of public health criteria involving E. coli and enterococcus.

Another major accomplishment has been to increase public awareness in this day of information, the information age, and the web site. EPA has launched an eBeaches web site with other partners, with States. We are all part of this important effort so that the public, whether it is through computers or through other means, gets a much better sense of the quality of the beach water.

Another major item I want to focus on, Mr. Chairman, is getting to the next step, and that is completing our critical science research plan. In the next month, month and a half, we will complete this important plan. It is based in many respects on the unprecedented workshop we had in March where we had 42 of the Nation's experts including international experts convene at EPA's request and identify the key scientific issues to move us further to get to the point where we can with confidence use these rapid and reliable methods and the best possible indicators of pathogens.

The other major point I want to make is that as we go through this science plan and complete it, we are fully committed to and we will continue to put a priority on this effort with our research office to complete those studies. That will also allow us to issue the cri-

teria that was envisioned by Congress in the Beach Act, the criteria and standards so that we can continue to make progress.

Then the last point, Mr. Chairman, is that as we focus on the sound science, the public awareness and the pollution prevention, this is a critically important program to remind all of us, State partners and local officials, of the importance of controlling stormwater, looking upstream to reduce wet weather flows, nonpoint source pollution and other forms that ultimately are contributing to the water quality impairments.

Thank you very much, Mr. Chairman. I appreciate the opportunity.

Mr. BISHOP. Mr. Grumbles, thank you very much for your testimony.

We will now move to Commissioner Jackson.

Commissioner Jackson, welcome to the Committee.

Ms. JACKSON. Thank you. Thank you, Mr. Chairman and Ranking Minority Member Baker.

I just want to speak a few minutes. You heard from my Congressman, Frank Pallone, and Congressman LoBiondo about the importance of New Jersey's beaches, so I will quickly re-emphasize the fact that our beaches in New Jersey are a statewide, but also we believe a national, treasure.

Besides the economic impact and tourism industry, I think one of the things that I like to talk about is the culture of beaches in New Jersey. Clearly, there is an example of beach culture here, but for most people in New Jersey we believe part of our heritage is our beaches.

It is true that 30 years ago our cooperative coastal monitoring program became a model for what is now the original BEACH Act, and we are very proud of that. So I would just like to spend a few minutes letting you know how we implement our monitoring program in the State because I think there are lessons there for how this Act, if implemented, could move forward the Country's work with respect to beaches.

We have 188 ocean and 76 bay monitoring stations, and our CCMP enables local health agencies to respond to immediate public health concerns during our beach seasons. Luckily, the majority of our beach visitors have never seen a beach closed sign. However, local beach managers take them very seriously not only from the standpoint of notifying the public which is, of course, their primarily purpose but also because they trigger a series of actions to track down and determine the source of any closure.

The majority of our closures are actually associated with one stormwater issue that we are working hard to remedy. It will take a bit more time and certainly some more money, but the State is aware of what happens around the rec pond area.

That aside, when we do have closures, we perform sanitary surveys in those beach areas to determine and investigate the source of any water pollution, and the protocols that have been established and followed now for 30 years and improved upon over that time allow us to work closely with local and county governments to make sure that that is happening.

In addition, we have for many, many decades now used monitoring first by vessels and then later with planes and helicopters

to actually fly our coast. We do that cooperatively with EPA. I think they fly one day and we fly the other six days or five days a week. That allows for some amount of sampling as well as visual observation of algal blooms or other near shore problems that may cause concern and gives us an early warning system for our beaches.

Partial funding for that program has come from BEACH Act grants.

We certainly support the legislation sponsored by Congressman Pallone. Our Senator Lautenberg is also supportive of it in New Jersey for a few reasons.

You heard about the need for enhanced funding. As much as work as we do in New Jersey and while we appreciate our BEACH Act grants, we could and would do more if we had additional funding. Our beaches are important enough to us that we have already made State funding available through the sale of shore license plates which brings in over $200,000 to augment our BEACH Act work.

We would also improve tracking of pollution sources. I think that that is probably one of the most important parts of the reauthorized BEACH Act being proposed. We have been limited because of funding in our ability to do a number of trackdowns.

We have done some successfully, applying microbial source tracking techniques such as viral coliphage, antibiotic resistance testing and the use of optical brighteners at several locations around the State with very, very impressive results and with results that mean fewer beach closings and fewer incidents around our beaches. We are pleased that the reauthorized BEACH Act would provide funding that would allow us to expand that program greatly.

The rapid test methods, you have already heard about. We are proud to work this summer with the U.S. EPA in our region to evaluate a method rapid for measuring bacteria in marine waters, and we are planning to use our 2008 BEACH Act funds to purchase equipment to allow us to do additional testing of that rapid test method.

Timely public notification, although New Jersey prides itself on getting results up within an hour of receipt, obviously the time it takes to receive them is the critical path right now for us.

So once again I would like to close up by thanking you for the opportunity to appear and testify, and I am happy to answer any questions.

Mr. BISHOP. Thank you very much.

We are going to move to Supervisor Heaney. It is not often that one gets to introduce one's hometown supervisor to testify before a Congressional committee, so if I just may say a word about Supervisor Heaney.

He has had over two decades of experience as an elected official in the Town of Southampton, and he has throughout those two decades a strong record as an advocate for protection and preservation of our natural resources. He has been a member of the Southampton Town Board of Trustees, a town councilman, and deputy supervisor and now for the last six years, the supervisor of the Town of Southampton.

On this occasion, I would like to thank you, Mr. Supervisor, for your service to my hometown, and I anxiously await your testimony. Thank you.

Mr. HEANEY. I am happy to be here to represent a typical coastal community that can benefit from the ongoing work of this Committee. The Town of Southampton is a coastal community of 59,000 residents, located approximately 70 miles east of New York City, and it is wedged between the Peconic Bay which is part of the National Estuary Program and the New York State designated South Shore Estuary Reserve.

These areas provides over 300 miles of shoreline, 19,000 acres of inland tidal areas and nearly 20 miles of Atlantic Ocean coastline beaches. Here, one finds magnificent scenery, fishing, farmland, boating, dining, hawks and hiking, trails, lush wetlands, bays and creeks. Summer draws hundreds of thousands of visitors from all over the world and contributes millions of dollars to the local economy.

Today, thousands of jobs and millions in revenue are derived from maritime industries along our beaches and adjacent waterways. These waterways also support several thousand sport fishermen and commercial fishing fleets at Shinnecock Inlet, the second largest in the State of New York with over 50 commercial trawlers and long liners operating year round. Collectively, they produce a dockside value exceeding $16 million per year and roughly $80 million when one factors in economic multipliers.

Southampton's beaches are our main recreational destination. Each summer, our population nearly triples, and attendance at public beaches exceeds 370,000 people generating almost a million dollars just from seasonal vehicle passes alone.

Beach-goers also put hundreds of millions of dollars into the regional economy through boating, swimming, diving, shopping, sailing, birding and second home construction. They are also a mainstay of the local restaurants, stores and service industries.

In terms of biodiversity, our beaches and estuaries are irreplaceable. They support nearly 200 uncommon species of animals and plants. These species include Federally threatened sea turtles, shorebirds, raptors, offshore whales, rare plants as well as nearly 150 species of fish and shellfish vital to marine ecology and the economy of our township.

Pathogen inputs to the Peconic and South Shore Estuaries present a significant concern because of potential health risks and the economic losses associated with the closure of shellfish beds and public bathing areas. Our bays are critical spawning grounds for scallops which have sharply declined in numbers due to excessive nutrients, low oxygen, contamination of shellfish beds and recurring brown tide algal blooms.

Millions of dollars are being spent by Federal, State, county and local governments along with Brookhaven National Laboratory and Stony Brook University at Southampton to support pathogen management and brown tide research. However, additional research and funding is necessary.

Tremendous advances have been made to improve water quality and to safeguard beaches by controlling pollution and pathogens

from non-point sources such as roadway runoff and boat septic wastes, but much more needs to be done.

Our non-point source pollution education began with the passage of Southampton's own Clean Water Bond Act in 1993, a funding program that continues to capture runoff from roadways that lead to our bays. The town also receives matching funds from the State and the county to enact stormwater abatement projects along literally hundreds of miles of shore-fronting roads.

Thanks to Federal assistance, Southampton manages a free mobile pumpout program to eliminate boat wastes. We operate seven boats, seven days a week between Memorial Day and October 15th each year, and last year we removed close to 100,000 gallons of septic waste from recreational boats in the Peconic and South Shore Bays.

To further combat the loss of tidal wetlands, Southampton also relies on a local community preservation plan that has purchased at least 200 acres of beachfront property. These initiatives also include water quality monitoring, scallop seeding, shellfish population surveys, aquaculture pilot programs, residential and commercial fuel tank removal rebate programs and restoration of beaches and even eel grass beds.

Since the collapse of the local bay scallop harvest in 1985, some local baymen have resorted to growing finfish and shellfish in cages and racks out in open clean waters.

We urge you to continue to act to protect coastal resources so that we can continue with these important conservation initiatives. Our maritime resources and beaches are crucial to maintaining public health, our economy and our recreational pursuits.

On behalf of the residents of the Town of Southampton and neighboring communities, I thank each of you for the opportunity to speak on behalf of the need to protect coastal resources.

Mr. BISHOP. Thank you very much, Supervisor Heaney.

We will now move to questions.

Mr. Grumbles, if I may start with you, as you know, the EPA missed its deadline for publishing revised water quality criteria, mandated by Congress that that deadline be October of 2005. It is my understanding from your testimony that you are now anticipating publishing that criteria by 2012, is that correct?

Mr. GRUMBLES. That is correct, Mr. Chairman, hopefully sooner than that.

Mr. BISHOP. One would hope.

Mr. GRUMBLES. The key is to get the science.

Mr. BISHOP. Can you just outline for us briefly why it is that the EPA is so far off the mark? This isn't a near miss. I mean from 2005 to 2012 is quite a gap.

Mr. GRUMBLES. I would be happy to, Mr. Chairman. The first thing I would say is that this landmark statute, when it was enacted, I think many people recognized that it is the right approach, that deadlines in the statute were ambitious and that the key principle was to use sound science in order to promulgate criteria and standards that were legally defensible as well as scientifically defensible.

So what we have been doing, Mr. Chairman, is we have been gathering the data. It has taken quite a long time in the terms of

interviewing 21,000 or more beach-goers, conducting the epidemiological studies and getting the science right on the indicators as well as the rapid methods.

It is an evolving area. The science is evolving, the molecular and the biological science. There are a lot of complex questions. So, Mr. Chairman, it has taken us time.

The key to the statute and the success of its implementation has been in the collaborative nature of working with the States because they are the ones who are truly on the front lines in terms of implementing the Clean Water Act criteria and standards and the permitting process. So it has been taking some time to do that.

The science has been evolving on the rapid methods but, Mr. Chairman, EPA is committed to accelerating the pace and to answering key questions that are arising today about the quantitative polymerase chain reaction and some of the other methods because we know in this litigious world we have got to get the science right.

Mr. BISHOP. The current authorization for the BEACH Act is $30 million a year. Current funding is about $10 million.

My question is: Is the fact that the EPA has had difficulty meeting this 2005 deadline and now will not meet it until 2012, to what extent, if any, is it related to the fact that you simply don't have enough people to conduct the analysis and issue the findings and if you do not have enough people, to what extent is that related to the fact that funding is at best case a third of authorized levels?

Mr. GRUMBLES. Well, I think the key to effectively carrying out, to meeting congressional and statutory deadlines, which we always strive to do, is to be able to have a plan under various funding scenarios. The plan that we have been operating under the last several years, one which Congress has also agreed to in terms of appropriating about $10 million each year, is based on priorities and on tiering and using risk and other important risk management methods.

I would say that we have the capacity, the current capacity to meet the expectations. We are running late on two of the nine areas that were identified in the statute, but I think we have the partners and also the inside expertise, in-house expertise to meet those deadlines.

The other thing, Mr. Chairman, is that the key question as the Committee focuses in on reauthorizing this important statute is to keep in mind that the success of it is to stay focused and not to open it up into a much broader program of broad-scale remediation, I think.

The Agency hasn't taken an official view on the legislation yet, but I think the key is to zero in on the monitoring and the public notification and to keep in mind other programs under the Clean Water Act and State programs can help implement in the pollution prevention steps.

Mr. BISHOP. Let us stay on that point for a moment. H.R. 2537 would make as an allowable use of funds, tracking the sources of coastal water pollution. Did I just hear you say that you believe that we should be narrowing our focus as opposed to expanding our focus, and if I did hear you correctly, what would your reaction be to a statute that would allow for a broader use of funds such as to track point sources of pollution?

Mr. GRUMBLES. I think that the Agency and the States and the local officials and stakeholders ought to understand more about the precise intent in terms of what those phrases are in the legislation.

What you will find from EPA is support for sanitary surveys using beach money for sanitary surveys, we take some pride in the fact that we are doing some cutting edge work on that in the Great Lakes. It is also happening in other places.

But, Mr. Chairman, when it comes to the broader beyond just the sanitary surveys but the pollution tracking and pollution prevention in a broader context, I think it would be very helpful for us to get more clarity as to what those broad terms are because I think we run the risk of losing momentum if we open it up to be a much broader statute beyond what it was.

I do think that the value of the beaches statute and the program that EPA is implementing is that once you do put a focus on the science and the monitoring and the public notification, then additional funds and resources and partners will come in, in the name of pollution prevention and pollution tracking, to take steps to reduce the problem so that there won't be as many closures or beach advisories.

Mr. BISHOP. Thank you very much.

Commissioner Jackson, in your testimony, you have indicated supporting expanding use of funds to allow for source tracking. But under current appropriations, again about $10 million and there are 35 States eligible for funding under the BEACH Act, that works out to about $300,000 a State, is tracking feasible under the current funding? If funding doesn't increase, what impediments does that put on the kind of work you are trying to accomplish?

Ms. JACKSON. Thank you, Mr. Chairman.

I believe under the current grant, trackdown work is prohibited. So the trackdown work that we currently do, New Jersey gets about $280,000 in BEACH Act grant funding, certainly not enough but because we pass about 80 percent of that on to our counties and municipalities who do the work in the field for us. It is important to get that work out to the front lines so that you can manage and move forward, I think, on science as well.

But what happens is and I do think it is a State prerogative or States are best able to come in when problems are found and look more regionally at a problem. So once we know we have an issue in terms of monitoring data, we like to come in with our staff, and this is where State funds are used to come behind that monitoring data and try to track down sources.

If you don't do that work, to me, I think it is an incredibly lost opportunity. It is nice to know what is going on, and I can't imagine why we wouldn't want to take the next step in finding out from a scientific point of view.

We have done this across regions and sometimes mediated a few disputes amongst municipalities about who is causing what problems at whose beach. The way to solve that is by actually pointing out the problem and making sure it gets fixed, maybe using some enforcement authority or 319 authority, sometimes some EPA grant money to get it done.

Mr. BISHOP. Thank you very much.

I just have one more question. Thank you for indulging me, Mr. Baker.

This is for Supervisor Heaney. We know we have been fortunate in Southampton that we have not had beach closures in the recent past. But can you just briefly give us what you would think the implications would be of, let us say, a weekend-long beach closure or even a week-long beach closure at the height of our tourist season?

Mr. HEANEY. Well, that would be catastrophic for us on the local economy. We still have essentially a tourist economy that relies heavily on the activity that occurs during the 13 or 14 week period between Memorial Day and Labor Day although, admittedly, we are seeing more and more year-round weekenders.

But to have a long-term closure of any of our oceanfront beaches along the 19 mile stretch that we have would affect just about every one of the economic sectors that I pointed out earlier in my comments and have a dramatic impact on local businesses from the bait shop to the nearby bed and breakfast and anyone in between.

Mr. BISHOP. Thank you very much.

Mr. Baker?

Mr. BAKER. Thank you, Mr. Chairman.

Mr. Grumbles, is there now identified or approved a scientifically accepted methodology for real-time pathogen determination?

Mr. GRUMBLES. Real-time meaning not just rapid but virtually now, getting the information? I think based on the expert workshop that we had, the answer is no.

Mr. BAKER. What type of time delay would technology now avail us from the standpoint of when the monitoring takes place?

Mr. GRUMBLES. We are very excited about the promising technologies. The molecular methods that involve DNA, as Congressmen and witnesses have testified to, it can mean getting results in two to three hours as opposed to 24 or 48 hours. A priority for us is to validate that and see that that can work and be accepted throughout the Country.

We still have some substantial questions, though, variability over those emerging technologies or the use of the DNA.

That is, honestly, Mr. Chairman and Congressman, that is a focus. A high priority for us is getting those rapid methods verified and validated and out into the field throughout the Country, not just on a pilot basis.

Mr. BAKER. Is the current best practices scientifically acceptable methodology basically the wet chemistry where you send it to the lab or is there anything between the two to three day wait and real time that is now deployable?

Mr. GRUMBLES. Well, I think that there are some in-betweens. I would also, Congressman, say that our research office along with the Water Office, are teaming up and putting a significant investment into the research precisely to answer the questions you have. I would also suggest that we can provide much greater detailed answers to your question for the record.

The technologies are promising. We all agree. I think there is consensus that this is where the Country needs to be moving. The technologies aren't quite there yet and the science.

Mr. BAKER. If I may, there is a cost-benefit issue underlying this. Right now, if the beaches are closed for two days, the local commu-

nity is uncertain as to water quality. There is two days worth of revenue lost or foregone because of the determination awaiting the chemistry process.

On the other hand, if we are have as close to real time, some sensing device in the water connected to a transponder which is going to digitally transform the findings to some central location which may require repeater stations because you can't have very significant high power off a pole-mounted transponder. Then you are going to have to have a data collection location which can take those varied sensor readings and put that into something usable for the internet user at home who is trying to find out can I go to the beach today in some form or fashion.

I don't know quite yet because the technology is emerging as to whether or not the cost to the local community who is going to have to bear the brunt of establishing these real-time reporting mechanisms is greater than the two day cost of the current beach closure using the wet chemistry.

All I am suggesting—and I am sort of indirectly responding to the first panel where there was great interest in real-time reporting—I am for it, but I think we need to move cautiously before we mandatorily deploy any new technologies before we understand what cost that represents to local communities who are going to be the folks actually paying for the reporting methodologies that we are going to dictate by law that they must utilize.

Would it be your view that even if new technologies are developed and a community could deploy real-time reporting, that it would still be an option for the community to determine to use the old methodology as long as they continued to close the beach when there was uncertainty?

Mr. GRUMBLES. Congressman, I don't know. I have a concern as well about locking into requiring EPA to include in the Clean Water Act 304 a criteria mandating the use of rapid methods at this point or including as a condition on EPA grants that Congress appropriates for us to the States that they use rapid methods.

We need to answer some more of the scientific questions, and there needs to be certainly in the statute but also in the EPA regulations, some degree of flexibility so that as the science continues to evolve and the technologies, that the States and that the local beach managers can actually use the best approach that makes the most sense and actually meets the Clean Water Act's goals.

Mr. BAKER. I come at it just slightly differently. I think if the protection of the beach-using customer is our goal and the community chooses to use the slower and more costly from a lost revenue perspective but that is their choice, bathers are prohibited from entering the water. They are secure.

If they choose to deploy the more rapid reporting system, which is a convenience to the beach user, however much more expensive I would suspect, the beach user is still protected because they are getting the benefit of real-time factual information.

But in either event, there is no greater health risk posed to the user of the beach. The beneficiary is the choice to the local community as to which method they would choose to utilize on economic basis. Now that doesn't step to the front of safety, but it enables you to preserve safety, using either out you want. You can buy a

new computer or you can be an old guy and get a slide rule. It doesn't matter to me as long as you get the answer right.

What I am saying here is that we get the answer right by protecting the user of the waters until we know for certain what the condition of the water is when they enter it.

I yield back, Mr. Chairman.

Mr. BISHOP. Thank you, Mr. Baker.

We are joined by the distinguished Chairman of the full Committee, Mr. Oberstar.

Mr. Oberstar?

Mr. OBERSTAR. Thank you, Mr. Chairman.

Mr. Baker, thank you for your participation. Always good to see you here. Thank you.

Mr. Grumbles, good to see you back here again. It is a familiar place for you on both sides of the table actually. You have served this Committee in both capacities and my former colleague, Arlen Stanglin. As I recall, you were his administrative assistant for a time.

Over in the corner is the portrait of former Chairman of this Committee, John Blatnik, the father of clean water legislation, my predecessor in Congress for whom I was administrative assistant for 11 and a half years and administrator of the Committee staff during the time that he was Chairman of this Committee.

When he took the chairmanship of the Subcommittee on Rivers and Harbors, which in fact is the oldest committee of the Congress established in 1789—this is just a little free history for everybody.

The first act of the first Congress was that of the Rivers and Harbors Committee to authorize the construction and maintenance of a lighthouse at Hampton Roads, and the second act of the first Congress was to authorize the construction and maintenance of a lighthouse at Cape Henry, all for the purpose of navigation, linking inextricably our Committee and its work with the water transportation and in subsequent years with the quality of that water.

When John Blatnik assumed the chairmanship of the Subcommittee on Rivers and Harbors, he took a journey down the Mississippi River for the purpose of understanding the navigational needs. As he traveled along, he saw the river, which starts just outside of my and his district and courses through that district, which was clean, beautiful water increasingly polluted by the time he got to New Orleans, he said there were raw phenols—and he was a microbiologist by training—raw phenols being dumped into the water, bubbling and boiling and killing everything in its wake. He was appalled.

He then took a look at the Tidal Basin, the Tidal Basin ringed by the cherry trees, and he noted its polluted condition and called it the best dressed cesspool in America. We have to fix this, and he created the Federal Water Pollution Control Act with the support of garden clubs and conservation societies and all the fishing and waterfowl hunting groups who wanted to preserve our precious resources of fresh water.

That was 1956, about the same time my late wife was in college nearby here at Trinity College. One of her classmates went boating on the Potomac, canoeing, and fell overboard. The poor child, by the time Jo and I were married many years later, still had a skin

rash from falling into the Potomac, the same river George Washington crossed at one time.

There are over 180 million people who are close to the water. In fact, three-fourths of the population of this Country lives along the water, either the saltwater coasts or the freshwater or the inland waterways, the rivers and lakes of this Country. Water-based activities are a $50 billion a year sector of our economy.

In 1972 in the Clean Water Act, we established a goal of fishable, swimmable waters by 1985 which, of course, we have not reached. Maybe about 60 percent of the Nation's waters are fishable and swimmable, but the goal remains.

It is astonishing to me that 50 years after the Federal Water Pollution Control Act of 1956 and 30 plus years after the Clean Water Act that EPA says we really don't know how to establish the scientific basis standards for clean water. It is not a defensible position.

I heard you say you want more clarity.

We have these national research laboratories of EPA. The environmental research laboratory in Duluth for freshwater, and we have the saltwater research laboratory in Rhode Island. We have an additional one at Corvallis, Oregon. We have five regional laboratories, two national laboratories. Haven't they been useful in establishing standards?

Mr. GRUMBLES. Mr. Chairman, as a student of the Clean Water Act and of your efforts in the Clean Water Act, I would say EPA does know how to establish standards and to identify indicators and methods for rapid reporting and reliable reporting. We have seen progress, and we have been a very integral part of the progress under the Beach Act.

The great challenge is to do even better which we need to do, and that is to move from the 24 or 48 hour methodology that results in tests over an extended period of time and to get to the point where a two hour or three hour test, something much closer to real time, is available and is scientifically and legally defensible.

I think we will get there, Mr. Chairman. We are doing what we can, and we will get the support of the academic community and other partners as well, but we are at a critical stage.

The question isn't whether or not we can set standards or have the technical know-how to establish criteria and standards. It is how do we get to that dramatic improvement for pathogens in coastal fresh and marine waters and move to the DNA-based, molecular-based methods?

I just want to clarify that that was the basic message, the point I was getting at, that the most important component of the Clean Water Act is the standards and then coupling that with the enforcement through the permitting program.

Mr. OBERSTAR. That is a very thoughtful response, but also remember that standards are not intended nor were they intended in the 1956 Act or the 1960 amendments or the 1961 amendments or the Clean Water Act of 1972 to be a static item. We know science advances. We know there is greater capability to detect at ever lower, smaller levels, harmful amounts of pathogens in the water.

We also are faced with the warming of waters for a longer period of time. The warmer the water, the greater the amount of pathogen

development and harmful development in that water, whether it is the coastal saltwater resources of the Country or the inland waterways.

Lake Superior, for example, with which you are very familiar having served Mr. Stanglin, is six degrees warmer than its all-time temperature. That is very serious. The lower lakes of the Great Lakes also have warmer temperatures which have fostered in Lake Erie the development of the viral hemorrhagic septicemia, and the sport fishery of Lake Erie is now migrating upstream.

You know these things, and so you take a snapshot today and say, all right, let us publish this standard. Then as science progresses and you have basis for improving the standards, then you move. But don't fail to or shrink from establishing a standard because you don't have the very last best, perfect scientific evidence.

I remember John Blatnik, out of frustration in a hearing with a group of scientists, sitting there saying, you know, I am a scientist too. That was my whole training. Take this test tube and say, yes, it is polluted, and then go back and study it some more. At some point, we have to take action, and that is what legislation is about.

Mr. GRUMBLES. Mr. Chairman, if I have permission, I would love to submit for the record the report that the Agency has compiled based on the expert workshop that was held at the end of March. It is on our web site.

Mr. OBERSTAR. How many pages is it?

Mr. GRUMBLES. It is about 150, I think, 150 pages. It raises questions.

Mr. OBERSTAR. Is there an executive summary of it?

Mr. GRUMBLES. There is an executive summary.

Mr. OBERSTAR. I ask unanimous consent, the executive summary be included in the Committee record.

Mr. BISHOP. Without objection, so ordered.

Mr. OBERSTAR. And the full document received for Committee files. I would like to review both.

Mr. GRUMBLES. It raises questions not for the sake of paralysis by analysis, but the experts throughout the Country and there were also some international experts to make sure that we make the most sophisticated and responsible decisions, taking into account tropical and subtropical waters, varying conditions and just that we move forward smartly but that we move forward.

I think it is a good resource for the Agency, and I appreciate that you include it as part of the record.

Mr. OBERSTAR. I would be happy to receive that, and I look forward to reading it myself and will do so in depth.

I would just conclude by observing that Congressman Bilbray felt so strongly about this beach issue. He worried us to death when he first introduced this bill, and then he felt so strongly about it he ran for Congress and got re-elected to come here and make sure it is carried out.

With that, thank you very much. I want to thank our two witnesses, Ms. Jackson and Mr. Heaney, for being here with us today and thank you for your contribution.

Mr. BISHOP. Thank you, Mr. Oberstar.

Mr. Brown?

Mr. BROWN. Thank you, Mr. Chairman, and thank you to the witnesses for coming and being with us today, and my question is to Mr. Grumbles.

Mr. Grumbles, I represent South Carolina which is Myrtle Beach and Charleston. It is probably about 175 miles of the coast, and so this is a special item of interest to us too.

My first question would be: Has EPA had the same formula in place for distributing BEACH Act dollars since the program's inception or have you changed your formula?

Mr. GRUMBLES. Congressman, thank you for the question because it is a subject that we are spending considerable time reviewing and revising. In 2002, we issued guidance, performance criteria guidance, and we also established a formula. So that is the formula that we have been using.

Prior to GAO issuing a report, which I believe will come up in this hearing, we convened a State EPA workgroup to ask amongst our State partners should the formula be revised. We look at beach miles. We look at beach season. We look at beach use. Should we be revising that?

So we are in the midst of digesting the GAO recommendations and also getting further input from our State partners on whether and/or how to revise that formula.

Mr. BROWN. If I might just maybe add some input, I am curious. Have you taken into account the number of tourists that would be visiting those beaches?

Mr. GRUMBLES. As I understand it, we do look at one very important component is the use by the public of the beaches, and that is also an important part in terms of the States, how they tier their beaches for monitoring and protection activities. It is based on the risk and also use by the public.

Mr. BROWN. Thank you.

Ms. Jackson, if I might ask, one area where my State is facing pressure is the need to expand monitoring in response to additional development and beach use along the coast. Has New Jersey experienced similar challenges and, if so, what have you done to meet those needs?

Ms. JACKSON. Thank you. Yes, New Jersey is the most densely populated State, and near a couple of population centers we have seen increasing use except in those years when we have a beach scare, and those can be extraordinarily expensive and take a long time for us to recover from.

We have spent a lot of State money and local money. We take our BEACH Act funding seriously, and we need more of it in order to work on a couple of things. The development of rapid test methods is something we support. Frankly, our citizenship asks for it and is to the point of demanding it. They want us to be cutting-edge at the State level and not to wait for a rapid test method.

The other thing that we spent a lot of time and we have gotten some funding from EPA that we are grateful for is on timely public notification. We pride ourselves in getting the results of the monitoring we have up within one hour.

I spoke earlier about the amount of time and resources we spend on source trackdown. Once we find a problem, the State thinks it is one of our unique roles to work regionally to find the sources of

pollution because if it is usually a recurring problem. Sometimes it is a one time hit, but often times it is a recurring problem, and we have to work across jurisdictions to bring a solution to the problem, so we can be done with it.

Thank you.

Mr. BROWN. I thank you very much for your response.

Mr. Chairman, I yield back the balance of my time.

Mr. BISHOP. Thank you very much.

I want to thank our second panel for your testimony and for your response to our questions, and we will now move to our third panel. Thank you very much, all of you.

Our third and final panel for the afternoon will consist of: Ms. Nancy Stoner, the Director of the Clean Water Project of the Natural Resources Defense Council; Ms. Mara Dias, Water Quality Coordinator for the Surfrider Foundation; Dr. Mark Gold, Executive Director of Heal the Bay; and Ms. Anu Mittal, Director of the Natural Resources and Environment Division of the Government Accountability Office.

We will accept your full written statements for the record, but we ask that you try to limit your verbal testimony before this panel to about five minutes.

Ms. Stoner, we will begin with you.

TESTIMONY OF NANCY STONER, DIRECTOR, CLEAN WATER PROJECT, NATURAL RESOURCES DEFENSE COUNCIL; MARA DIAS, WATER QUALITY COORDINATOR, SURFRIDER FOUNDATION, SAN CLEMENTE, CALIFORNIA; MARK GOLD, EXECUTIVE DIRECTOR, HEAL THE BAY, SANTA MONICA, CALIFORNIA; ANU K. MITTAL, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, GOVERNMENT ACCOUNTABILITY OFFICE

Ms. STONER. Thank you very much, Mr. Chairman. I appreciate the opportunity to testify this afternoon, and I appreciate the Subcommittee's interest in beach water pollution and in particular in reauthorizing the BEACH Act.

Americans love to go to the beach, and we are blessed with thousands of miles of beautiful beaches, many of which we have been hearing about this afternoon, but our beaches are threatened by coastal development, by the pollution generated by people, the pollution generated as people move into coastal areas, which Americans are increasingly doing.

Development is occurring in the United States at twice the rate of population growth and occurring even faster in coastal areas. What this generates is sewage pollution, contaminated stormwater pollution and the loss of wetlands and soil and vegetation that serve as pollution sinks that capture and filter pollution in a natural environment. The result is that we have human and animal waste in the waters.

NRDC does a report ever year, called the Testing the Waters, on beach water pollution. That report isn't yet available for this year, but last year we found that there were more than 20,000 beach closings and advisories in the U.S. That is not only a threat to the environment and to public health but to coastal economies as well.

So I am delighted to see the interest of the Subcommittee here and of the Chairman, Mr. Oberstar, in this issue.

In 2000, Congress passed the BEACH Act. There are two aspects of it that I wanted to mention: funding State and local monitoring and public notification programs and requiring EPA to update the public health-based standards for ensuring that beach waters are safe.

There has been significant progress in the first component of this. Now every coastal State has a beach water monitoring and public notification program. There were only a handful of such programs before the BEACH Act was passed in 2000. But the more monitoring that is done, the more unhealthy beaches we find.

In addition, as we have been discussing, EPA has failed to comply with the mandate to update the public health-based standards. Those standards are more than 20 years old. They are based on even older science. They fail to protect beach-goers from the full range of waterborne illnesses, and they do not provide adequate protection for children, the elderly and others who are most susceptible to getting sick from swimming in contaminated beach water.

There are three particular things that I would like to address this afternoon, all of which have been mentioned in the hearing already today and all of which are in H.R. 2537, the Beach Protection Act, which our Agency strongly endorses and appreciates your leadership in.

The first is faster testing. I have heard a lot of indications of support for faster testing, and I believe that is necessary and appropriate. I support those provisions in the law. It just is unacceptable to have people get information about what the beach water quality was a day or two days earlier. They need to know when they swim as close as possible, as close as we can provide that information on whether the water is safe.

The rapid tests that are currently being piloted in several States provide that information in two hours or less. The beaches can be monitored early in the morning and posted by, say, 10:00 in the morning when most people arrive at the beach, so people can know whether the beach is safe when they swim, not whether it used to be safe or whether it may be safe in the future.

The second thing is increasing funding for prevention as well as monitoring and public notification. This is also in H.R. 2537. I think it is really important.

People want to have a safe beach. They want not only to know whether the beach water is safe, but they want to know that it will be safe and that they can go to the beach and enjoy the beach with their families without being afraid of getting sick. In order to do this, we need to identify and address the sources of beach water pollution.

I fully understand and I think the Committee fully understands that there are other sources of funding for sewage and stormwater pollution. As a matter of fact, I had the privilege of testifying before the Committee earlier this year on the Clean Water State Revolving Fund, which is one of the major sources. That is not what we are trying to address here.

What we are trying to address here is sanitary surveys, source tracking and the immediate sources of beach water pollution. Is

there trash on the beach that is attracting wildlife? Are there other things that could be addressed and immediately correct the sources of beach water pollution to complement the SRF?

The third and last point I wanted to make is improved communication between environmental agencies and public health authorities. A piece of this is in H.R. 2537. Another piece is in another piece of legislation that you have sponsored, Mr. Congressman, H.R. 2452, the Raw Sewage Overflow Community Right to Know Act.

These two pieces of legislation work together to ensure that the beach water managers who know when the beach is contaminated are in communication with the environmental agencies who have the responsibility of regulating the sources of beach water pollution. They both need to know when there is a problem, so that it can be addressed.

I appreciate the opportunity to testify this afternoon, and I look forward to working with you as this legislation moves forward.

Mr. BISHOP. Thank you very much for your testimony.

Our next witness will be Ms. Mara Dias who I am proud to say is a graduate of Southampton College, an institution that I served for a long, long time.

Ms. Dias, welcome to the Committee.

Ms. DIAS. I would like to thank you, Mr. Chairman, for the opportunity to speak and Congressman Baker and the rest of the Committee members.

I as well have brought along a little prop for a history lesson. This is a surfboard that was signed by over 100 members of the House of Representatives, and on the back there are some Senate signatures which just sort of demonstrates the unanimous support that the BEACH Act had in 2000 and the real need for legislation such as this to keep our beaches clean.

Surfrider Foundation is a grassroots environmental non-profit dedicated to the protection and enjoyment of the world's oceans, waves and beaches for all people. Surfrider operates through a system of over 60 chapters located in almost every coastal State.

Many of our members are in the water daily, so poor water quality is a real concern for us. Surfers have unfortunately begun to take on the role of the canary in the coal mine as the pollution of our beaches becomes more prevalent around this Country. Along all of our coasts, surfers and swimmers are noticing flu-like symptoms after being in the water, and they often turn to us when they believe they have become ill from surfing in polluted water.

The BEACH Act of 2000 is responsible for great improvements in beach monitoring, but unfortunately inadequate funding has prevented full State implementation and has left the public health at risk in many instances. Many State programs are understaffed and are unable to meet all of their current testing requirements.

Blue Water Task Force is Surfrider's water quality monitoring program. Many of the chapters' Blue Water Task Force sampling programs have been designed to fill in the gaps left by the State programs. For instance, beach monitoring is limited to the summertime only in most cold water States. Surfers, however, are in the water year round and even swimming is popular well into the warmer fall months.

Surfrider members in both Delaware and New Hampshire are working with their State agencies to extend the beach monitoring season beyond summer without adding further financial or staff burden to the States. In Delaware, they have been collecting samples year round since local surfers got ill after surfing in the fall.

Inadequate funding has also resulted in geographical gaps in State programs. In California, some of our volunteers are collecting samples from more of the remote beaches and bringing them to the county health department for analysis to increase their coverage. Because States are forced to prioritize which beaches they will sample, they often choose beaches where they know there are water quality problems, but this leaves the public health at risk at the beaches that are being passed over.

Both in Oregon and New Jersey, Surfrider data have been shared with the States to demonstrate new water quality concerns, and as a result beaches have been added to the State programs that were not previously being sampled.

If Federal funding were appropriated at the levels recommended by the Beach Protection Act of 2000, I believe many of the gaps and problems with current State implementation could be corrected.

Surfrider is also supportive of using BEACH Act funds to investigate the sources of pollution. When people see the no swimming signs, their first question is almost invariably: Why? We need to be providing the answer to this question, so that coastal communities can take action to correct their water quality problems and the signs can be taken down for good.

Surfrider also agrees that EPA needs to begin approving new rapid methods. The long lag time can leave swimmers exposed to polluted water, but the opposite is also happening. Many States take a very cautious approach and close beaches preemptively after heavy rain, not knowing whether the water is polluted or not. Then they have to wait to see if it is safe for swimming, leaving the beaches closed when it could have been fine.

This happened just this past holiday weekend in Long Island. Heavy rain and thunderstorms on July 4th caused preemptive closures at nearly 70 beaches, and that is just in Suffolk County alone.

There are rapid methods available now that the EPA should be considering for approval. A sound streamlined process to approve these new methods needs to be developed without delay. Relying on old methods is putting the public health at risk and hurting the economy.

The GAO has pointed out before that there are many inconsistencies in implementation of the BEACH Act, and this is certainly the case. The EPA should be taking a strong leadership role through the proposed annual reviews to set the bar for State implementation.

In particular, we ask that EPA take a close look at how our beaches are being posted. This has been an area of concern for many of our members. At Pismo Beach in California, they were using cardboard signs that were either getting wet or blowing away. This has been corrected since then.

Additionally, in Corpus Christi, Texas, the city has refused to post swimming advisories at beaches even when directed to do so

by the State program. This refusal seems to stem from fears that no swimming signs will drive tourists away and hurt the local economy, but Surfrider has been trying to educate the city on how issuing swimming advisories can actually be protective of the tourism industry and will protect the city from certain economic disaster that would occur if tourists became ill and the proper warnings were not in place.

In closing, the Surfrider Foundation would like to thank this Committee for listening to the perspective of our members who are at the beach and in the water daily. We also urge Congress to consider the real costs of running comprehensive State beach monitoring programs that are in the best interest of public safety, the environmental health of our beaches and also the vitality of our coastal economies.

Mr. BISHOP. Thank you very much.

Dr. Gold?

Mr. GOLD. Thank you.

My name is Dr. Mark Gold. I am President of the Santa Monica environmental group, Heal the Bay. Thank you for the opportunity and honor to testify on the BEACH Act amendment legislation.

I have spent over 20 years working on beach water quality issues. As background, I was a co-author of the 1995 Santa Monica Bay epidemiology study on swimmers in runoff contaminated waters. I participated in EPA's experts scientific workshop on critical needs for the development of new or revised recreational water quality criteria which you have heard already from Mr. Grumbles.

I helped authored California's beach water quality standards, monitoring and notification law, probably the premier law in the Country, and helped create California's Clean Beach Initiative which has allocated over $100 million to clean up the State's most polluted beaches in about the same timeframe as the Federal Government has only allocated about $62 million.

I helped create Heal the Bay's Beach Report Card which provides weekly grades for nearly 500 California beaches on an A to F basis based on fecal bacteria densities. What you see on the screen is the Beach Report Card and then the next screen, just to let you know what it is, that is for Santa Monica Bay area and gives you an idea of we are grading more than 500 beaches on a weekly basis and getting that information out to the public on every single Friday afternoon.

Heal the Bay strongly supports Representative Pallone's H.R. 2537 because it provides a substantial and necessary funding increase to the program. To date, only $62 million over seven years has been made available for this program and the results have been predictable.

Far too many heavily visited beaches are not monitored or monitored infrequently and inadequately. Also, in many States, the public is ill informed about water quality at their favorite beach. A day at the beach should not make you sick, but inadequate monitoring and poor public notification could lead to millions of swimmers unknowingly exposed to unacceptable health risks.

In addition, Heal the Bay has the following recommendations for an amendment to the bill. EPA's 2002 monitoring and assessment

performance criteria were generic, advisory in nature and they were only guidance. So please amend the bill as follows:

EPA shall develop a baseline beach monitoring and public notification program that shall be used to determine eligibility of States for BEACH Act grant funding. The program shall include criteria for which beaches must be monitored based on visitorship, proximity to potential pollution sources, minimum monitoring frequency, sample collection requirements, analytical methods, beach closures requirements for sewage spills and public notification requirements. If a State does not utilize a program that meets or exceeds this baseline program, then they should not be eligible for BEACH Act funds.

This amendment is critical to ensure that monitoring results between States and even counties are comparable. For example, currently one cannot compare water quality in Florida, New Jersey, Hawaii or California because the programs are all so different. Using a metric of number of beach closures or postings to compare counties and States only provides meaningful information if monitoring programs are comparable.

Eligibility criteria are commonly used in Federal grant programs to ensure high quality projects, and the same incentive for effective and protective monitoring and public notification programs should occur for BEACH Act funding.

As you know, the recreational waters criteria development requirement for pathogens and pathogen indicators was not met by EPA. As a Nation, we are still relying on criteria based on epidemiology studies completed in the 1970s. Many studies have been completed subsequent to EPA criteria development, and some extraordinary studies are going on as I speak.

Please require EPA to look at the results of all pertinent studies completed subsequent to 1985 for criteria development. Also, please require the EPA to protect swimmers in freshwater and marine waters equally, a major shortcoming in the current criteria.

The most sensitive population of swimmers, children, must be protected under the new criteria.

Also, if the EPA should choose to eliminate an indicator for criteria use, like E. coli in freshwater which is something they are thinking about, then the Agency must provide scientific substantiation for eliminating the criterion.

Finally, criteria development must take into account different sources of pathogens. In the past, the EPA has focused on sewage sources in temperate waters. The new criteria must take into account differences between temperate, subtropical and tropical waters and sewage, urban runoff and non-point source runoff such as confined animal feedlots, agriculture and septic systems sources.

All of these recommendations are in the recently released experts report you heard about previously.

In conclusion, despite my strong recommendations on improvements necessarily to strengthen the BEACH Act, I do want to thank EPA for their efforts on the experts workshop and their unbelievable cooperation in providing funding for a health effects study in Avalon on Catalina Island that will start at the end of this month.

Congress has a great opportunity to turn a good law into an effective law that will protect the health of hundreds of millions of swimmers every year.

Thank you for the opportunity to speak. I am more than happy to answer any technical questions that you may have, for example, on methods and the like. Thank you.

Mr. BISHOP. Thank you very much.

Ms. Mittal?

Ms. MITTAL. Mr. Chairman and Mr. Baker, thank you for inviting us today to participate in your hearing on the BEACH Act.

Recently, GAO issued a report on the implementation of the BEACH Act and the impact that it has had on water quality monitoring at some of our Nation's beaches. My testimony will summarize the findings and recommendations that were included in the report and which underscore many of the points that you have already heard today.

As you know, to accomplish the goals of the BEACH Act, EPA was required to implement nine specific provisions. We found that EPA has implemented seven of the nine provisions. As a result all 30 States and 5 territories with coastal recreational beaches now use EPA's water quality criteria for beach monitoring, and the public has better information on the number of beaches being monitored and the extent of contamination at these beaches.

However, we also found that EPA has not complied with two key requirements of the Act. First, it has not completed the pathogen and human health studies that were to be done by 2003 and, second, it has not published the new water quality criteria that were required by 2005. As a result, States continue to use outdated criteria established in 1986 to monitor water quality.

Because actions on these two provisions are several years behind schedule and may not be completed until 2011 or 2012, we recommended that EPA provide the Congress with a definitive timeline for completing these actions.

The BEACH Act also authorized EPA to make $30 million annually in grants to eligible States and territories. However, since 2002, the grant program has only been funded at about $10 million a year.

A consequence of this lower funding level is that States receive grants that do not reflect their actual monitoring needs. In fact, we found that States with significantly greater monitoring needs because they have longer coastlines and larger coastal populations receive almost the same amount of funding as States with significantly smaller coastlines and smaller coastal populations.

This relatively flat distribution of grants across the States is due to the combined effect of the lower funding levels and the way that EPA applies the grant distribution formula. We, therefore, recommended that if funding for the program is not going to increase, then EPA should revise its formula to provide more equitable grants to the States.

We also reviewed how some States have used their BEACH Act grants and found that these grants have helped increase the number of beaches being monitored as well as the frequency of the monitoring. Because of this increased level of monitoring, States

now know which beaches are more likely to be contaminated, which are relatively clean and which need more resources.

However, we also identified a number of inconsistencies in how often the States conduct their beach monitoring, how they take water samples, how they make beach closure or health advisory decisions and how they notify the public if they find a problem. These inconsistencies could lead to inconsistent levels of public health protection across and among States. To address these concerns, we recommended that EPA develop specific program guidance for the States.

Although the BEACH Act has helped identify the scope of contamination at coastal beaches, in most cases the underlying causes of this contamination remain unknown and unaddressed. States told us that they do not have the funds to identify what is causing the contamination that they now know exists because of the BEACH Act and they do not have the funds to take actions to mitigate these problems.

As you already know, BEACH Act funds cannot be used for these purposes. Therefore, we recommended that Congress consider providing some flexibility to the States to allow them to use a part of their BEACH Act grant to identify sources of contamination and to take some corrective actions.

In conclusion, Mr. Chairman, while the BEACH Act has helped States improve water quality monitoring, much remains to be done if we are to fully protect U.S. beach-goers.

EPA needs to complete the studies and the new water quality criteria that were required by the Act. The program needs to be fully funded or the grant distribution formula needs to be revised. Inconsistencies in States' monitoring programs and notification programs need to be resolved, and funding is still needed to address sources of contamination.

This concludes my prepared statement. I would be happy to respond to any questions.

Mr. BISHOP. Thank you very much.

We will now move to questions.

Ms. Stoner, let me begin with you.

It was 1998 when this Committee last held hearings on the issue of beach water quality. At that time there was near unanimity that the water quality criteria standards that were currently in place were inadequate, and it was for that reason that the BEACH Act directed the EPA to update these standards before 2005. We now know that we won't be getting an update until 2011 or 2012 which I find shocking, frankly, but that is what we have been told.

I understand that the NRDC agrees that these standards are in need of updating and revision. Can you indicate why you feel the current standards are inadequate and what specifically needs to be addressed by any new standards that the EPA may promulgate?

Ms. STONER. Yes. Thank you for that.

One thing to mention is that we, of course, brought an action against EPA, NRDC did, about a year ago to ensure that the Agency complied with the requirements of the BEACH Act, which we think are necessary and appropriate.

Dr. Gold mentioned a number of the deficiencies in the standards. One of them is really that they were based on epidemiological

studies focusing on sewage influenced beaches and focusing on gastroenteritis. So they haven't looked at the full range of sources that cause beach water pollution, the largest known source of which is actually contaminated stormwater, and that is one of the very important things that they do updating the standards.

They also haven't looked at all the different kinds of ailments associated with swimming in contaminated beach waters: respiratory illness, earache, pink eye, even very serious ailments, encephalitis, meningitis and so forth.

So we would like the standards that will protect the public from the full range of illnesses and, as was mentioned earlier by several witnesses, provide sufficient protection to ensure that small children and elderly people, pregnant women, others who are most likely to get seriously ill can swim safely at the beach.

Mr. BISHOP. Thank you.

One other question for you Ms. Stoner: There has been broad agreement among the panelists this afternoon, with the possible exception of the EPA, that allowing source tracking to be an acceptable use of funds is certainly an appropriate and reasonable thing to do. Beyond that, what other role can the Federal Government take in helping to support State and local agencies to engage in this pollution source tracking?

Ms. STONER. Well, I think it is important to increase the authorization and to, of course, appropriate the funds for source tracking, sanitary surveys and other corrective actions to address the sources of beach water pollution.

If there is a stormwater pipe discharging near the beach, if there is a way to have it discharged into a wetland, if there is a bath house that is leaking sewage, those kinds of things are very important to do again to complement the other sources of funding that Congress provides.

Of course, the House has passed the reauthorization of the Clean Water State Revolving Fund. I certainly hope the Senate follows suit in that. I would like to see that fully funded as well. All of those sources of funding to municipal entities, to local utilities are very important in working with communities, assisting communities in addressing the sources of beach water pollution which, of course, is the ultimate goal—to have beaches that are clean and safe for everyone.

Mr. BISHOP. Thank you.

Ms. Dias, beaches are required to developed public notification methods, but there is no uniformity with respect to the methods that they use or the guidelines that would guide their notification. Do you believe that there should a Federal standard that all States should follow and, if so, what are your thoughts on what that standard would be?

Ms. DIAS. I think there needs to be a Federal standard both for the notification but also for the decision that is made because some States close beaches, some States don't close beaches. Some States issue advisories and if there is an advisory posted, someone can still go in the water, so that is another inconsistency.

On notification, yes, I definitely like what is proposed in H.R. 2537 about decisions should be made within 24 hours. I think that is certainly the least that we could be doing.

Mr. BISHOP. Thank you.

Dr. Gold, same question to you.

Mr. GOLD. Well, I would just add to that and say the fact that there be any discretion whatsoever on a sewage spill, if you have raw sewage getting to the beach, the discretion should be lost for any public health officer. It should just be an automatic closure. It is very, very well known what the health risks are for exposure to raw sewage, and so that would be something that I think would help dramatically.

Twenty-four hours, I think is absolutely critical in that regard.

How they do public notification from the standpoint of making sure that there is a 1-800 hotline, that there is some sort of web site information plus also point of access at the beach. I think those are all critical.

I would still leave discretionary, believe it or not, on the issue of whether or not you have high bacteria counts and you close or post a beach. Our organization has really taken the tack that that is a public right to know issue as much as anything else. If the public wants to take a risk of going in the water and swimming or surfing because the waves are great that day and they are willing to do that, they shouldn't be kicked out of the water.

If you can imagine, it is pretty difficult to kick people out of the water, but in the event of a raw sewage spill, all bets are off and there should definitely be people removed from the water.

There were a couple of other questions that were asked earlier that were technical of EPA that I have answers to. I am not sure if you are interested. Everything from how quickly the methods can provide information, some of the cost information that was being asked before, and I am not sure if this is a good time or place to do that.

Mr. BISHOP. If you could submit those for the record, we would be very grateful.

Mr. GOLD. Okay.

Mr. BISHOP. Thank you. Thank you very much.

Ms. Mittal, is that correct?

Ms. MITTAL. Yes, that is fine.

Mr. BISHOP. Thank you.

The GAO recommended that the EPA establish a definitive timeline for completing the studies that are outstanding on pathogens and their effect on human health. What was the Agency's reaction, if any, to that recommendation?

Ms. MITTAL. The Agency did concur with our recommendation. They said they would develop an action plan and provide a definitive timeline.

Mr. BISHOP. Okay. Thank you very much.

Mr. Baker.

Mr. BAKER. Thank you, Mr. Chairman.

It seems as though before we go to requiring communities to have real-time reporting, Mr. Chairman, we ought to at least get the EPA on real-time reporting. It would seem like a logical first step.

Ms. Mittal, in the concluding remarks of your prepared testimony, you made reference to flexibility at the community level to perhaps take action to cure an identified contamination source.

As Dr. Gold was talking, if there is clear, convincing evidence, immediate action is necessary, but that doesn't stop the problem. You need resources to go fix it.

Can you describe for me a little bit more clearly in the current program, what flexibility you have in mind with that recommendation?

Ms. MITTAL. Sure. What we heard over and over again from the beach managers we talked to is that the BEACH Act grants have allowed them to identify that there is a problem with the water quality.

Because they are doing more monitoring, they know there is a reoccurring problem, but the current grants do not allow them to go and use a little bit of that money to find out what is causing the problem. A very few localities actually have their own resources to go and identify what is causing the problem that is leading to the contamination, and so what we recommended was that within certain guidelines.

We don't want to divert all of this funding. Monitoring is very important, and the BEACH Act has been very successful in establishing these monitoring programs. So we don't want the communities to divert all the monitoring funds to now just going and either identifying sources of problems or remediating.

We want them to use within certain guidelines, within a certain amount of money, maybe just a small portion of it, and we thought that EPA could provide the guidelines for when that would be appropriate and use some of their money when they know there is a recurring problem to identify what is causing the problem and then maybe take some limited remediation actions.

What we heard from the communities that we talked to is often times the solutions are very simple. They just don't have the resources to identify what is causing the problem and how to fix it.

Mr. BAKER. That would get to my sort of follow-up question. It would be fairly easy, I would think, to have some sequential triggering steps. For example, it is repetitive. It is coming from a specific geographic location. The contamination is above a certain unacceptable amount.

Then you could provide out of the funds a basic match for which the locality or State or responsible jurisdiction would have to put up the other money. They don't get quite as much as bang for their buck out of that side, so there is a natural financial incentive to spend it on monitoring. But if it is really bad, you have got to assume localities are acting in good faith. They are not going to move that money for a remedy or identifying a remedy unless there is a real high need or justification.

I think that sort of premise should run through this whole program.

Again, with due respect to the experts about the availability of real-time reporting methodologies and the pilots which may be underway, until we have scientifically valid methodologies where we know we are not going to be having downtime. The worst thing about having new technologies is the wet chemistry may be three days. If the system goes down, you may be out for quite a while longer.

So reliability and scientific validity, I think, must precede what broad-based deployment. In the interim, allow communities to have flexibility to make the choice they believe best for protecting the most number of users in their communities.

I am not suggesting we shouldn't protect people. I am saying we should our best and highest judgment in how to deploy very limited resources in the most effective manner possible.

Thank you very much. I yield back.

Mr. BISHOP. Thank you very much.

This brings our hearing to a close. I thank you for your testimony and thank you for all of your work on this very important effort. Thank you.

[Whereupon, at 3:47 p.m., the subcommittee was adjourned.]

STATEMENT OF THE
HONORABLE RICHARD BAKER

HEARING ON
"REAUTHORIZATION OF THE BEACHES ENVIRONMENTAL ASSESSMENT AND COASTAL HEALTH ACT"

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
WATER RESOURCES & ENVIRONMENT SUBCOMMITTEE

July 12, 2007

- BEACHES ARE AN IMPORTANT PART OF AMERICAN LIFE.

- OUR NATION HAS NEARLY 23,000 MILES OF OCEAN AND GULF SHORELINE ALONG THE CONTINENTAL UNITED STATES, 5,500 MILES OF GREAT LAKES SHORELINES, AND 3.6 MILLION MILES OF RIVERS AND STREAMS.

- BEACHES ARE AN IMPORTANT PART OF THE COASTAL WATERSHED, PROVIDING NUMEROUS RECREATIONAL OPPORTUNITIES FOR MILLIONS OF PEOPLE, INCLUDING FISHING, BOATING, BEACHCOMBING, SWIMMING, SURFING, SUNBATHING, AND BIRD-WATCHING.

- EACH YEAR, OVER 180 MILLION PEOPLE VISIT COASTAL WATERS FOR RECREATIONAL PURPOSES.

- THIS ACTIVITY SUPPORTS OVER 28 MILLION JOBS AND LEADS TO INVESTMENTS OF OVER $50 BILLION EACH YEAR IN GOODS AND SERVICES.

- PUBLIC CONFIDENCE IN THE QUALITY OF OUR NATION'S WATERS IS IMPORTANT NOT ONLY TO EACH CITIZEN WHO SWIMS, BUT ALSO TO THE TOURISM AND RECREATION INDUSTRIES THAT RELY ON SAFE AND SWIMMABLE COASTAL WATERS.

- TO IMPROVE THE PUBLIC'S CONFIDENCE IN THE QUALITY OF OUR NATION'S COASTAL WATERS AND PROTECT PUBLIC HEALTH AND SAFETY, CONGRESS PASSED THE "BEACHES ENVIRONMENTAL ASSESSMENT AND COASTAL HEALTH ACT OF 2000," COMMONLY CALLED THE "BEACH ACT," IN THE 106TH CONGRESS.

- THE BEACH ACT AIMED TO LIMIT AND PREVENT HUMAN EXPOSURE TO POLLUTED COASTAL RECREATIONAL WATERS BY ASSISTING STATES AND LOCAL COMMUNITIES TO IMPLEMENT BEACH MONITORING, ASSESSMENT, AND PUBLIC NOTIFICATION PROGRAMS.

- THE ACT ALSO CALLED ON STATES WITH COASTAL RECREATIONAL WATERS TO ADOPT PATHOGEN-RELATED WATER QUALITY STANDARDS, AND DIRECTED EPA TO CONDUCT RESEARCH AND DEVELOP UPDATED WATER QUALITY CRITERIA TO PROTECT HUMAN HEALTH.

- UNDER THE BEACH ACT, EPA HAS BEEN MAKING GRANTS TO STATES TO HELP THEM IMPLEMENT PROGRAMS TO MONITOR BEACH WATER QUALITY AND NOTIFY THE PUBLIC IF WATER QUALITY STANDARDS FOR PATHOGENS ARE NOT BEING MET.

- AN IMPORTANT INDICATOR OF PROGRESS TO DATE IS THE FACT THAT ALL ELIGIBLE STATES ARE NOW

IMPLEMENTING THE BEACH MONITORING, ASSESSMENT, AND PUBLIC NOTIFICATION PROVISIONS OF THE BEACH ACT. THE NUMBER OF MONITORED BEACHES HAS INCREASED FROM APRROXIMATELY 1,000 IN 1997 TO MORE THAN 3,500 IN 2006.

- IN ADDITION, EPA HAS STRENGTHENED WATER QUALITY STANDARDS THROUGHOUT ALL THE COASTAL RECREATION WATERS IN THE UNITED STATES. ALL 35 STATES AND TERRITORIES WITH COASTAL RECREATION WATERS NOW HAVE WATER QUALITY STANDARDS AS PROTECTIVE OF HUMAN HEALTH AS EPA'S WATER QUALITY CRITERIA. THIS IS AN INCREASE FROM 11 STATES AND TERRITORIES IN 2000.

- FURTHER, EPA HAS IMPROVED PUBLIC ACCESS TO DATA ON BEACH ADVISORIES AND CLOSINGS BY IMPROVING THE AGENCY'S ELECTRONIC BEACH DATA COLLECTION AND DELIVERY SYSTEMS.

- MOREOVER, EPA HAS BEEN CONDUCTING CUTTING-EDGE RESEARCH TO SUPPORT THE DEVELOPMENT OF NEW WATER QUALITY CRITERIA TO PROTECT HUMAN HEALTH FROM PATHOGENS, AND NEW MONITORING METHODS TO MORE ACCURATELY AND RAPIDLY DETECT PATHOGEN CONTAMINATION IN RECREATIONAL WATERS.

- FASTER AND BETTER DECISIONS ARE GOOD FOR PUBLIC HEALTH AND GOOD FOR THE ECONOMY IN BEACH COMMUNITIES. WE ARE OPTIMISTIC THAT THIS WORK WILL HELP STATE BEACH MANAGERS MAKE THE BEST DECISIONS POSSIBLE ABOUT KEEPING BEACHES OPEN OR PLACING THEM UNDER ADVISORY.

- ALTHOUGH EPA AND THE STATES HAVE MADE SUBSTANTIAL PROGRESS IN IMPLEMENTING THE BEACH ACT, THERE IS IMPORTANT WORK LEFT TO DO IN THE AREAS OF MONITORING, RESEARCH, AND UPDATING EXISTING RECREATIONAL CRITERIA.

- REAUTHORIZING THE BEACH ACT WILL ENABLE EPA AND THE STATES TO COMPLETE THE IMPORTANT WORK THEY HAVE BEGUN, SO THEY CAN BETTER PROTECT PUBLIC HEALTH AND SAFETY AND CONTINUE TO IMPROVE THE QUALITY OF OUR NATION'S RECREATIONAL COASTAL WATERS SO IMPORTANT TO THE ECONOMIES OF OUR COASTAL COMMUNITIES.

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STATEMENT
OF
REPRESENTATIVE BRIAN P. BILBRAY
BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES

HEARING: "REAUTHORIZATION OF THE BEACHES ENVIRONMENTAL ASSESSMENT AND COASTAL HEALTH ACT"

July 12, 2007

Chairwoman Johnson, Ranking Member Baker and Members of the Committee, thank you for the opportunity to join in the discussion on reauthorization issues concerning the Beaches Environmental Assessment and Coastal Health (BEACH) Act (Public Law 106-284). This was legislation Congressman Pallone and I were proud to author in the 106th Congress. The legislation was passed with overwhelming bipartisan support and was signed into law by President Clinton.

The leadership of the House Transportation and Infrastructure Committee should be commended for their efforts to reauthorization of the BEACH Act. Under your leadership, a bill to reauthorize the BEACH Act that was authored by Congressman Bishop passed this Committee in the 109th Congress and then subsequently passed on the House floor.

President Theodore Roosevelt once said, "The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value." These words have resonated strongly with me, as a lifelong outdoorsman, former lifeguard, and through my career in elected office. This statement is as applicable today as it was when he said it more than one hundred years ago. We have an obligation to preserve and enhance our natural resources so that our children and grandchildren have the opportunity to enjoy the same quality of life we do today.

For this reason, the BEACH Act becoming law was a tremendous achievement for our nation. Growing up along the coast in San Diego, I saw how harmful bacteria and pathogens in the water can affect the health of both children and adults alike. Without basic standards for water quality evaluation, the health of our coastal waters and those that enjoy it would be threatened.

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The successful implementation of the BEACH Act throughout the past seven years has led to significant improvements in public health according to a report released by the Environmental Protection Agency (EPA) last October. Key findings I wanted to highlight to the Committee included:

- States have significantly improved their assessment and monitoring of beaches; the number of monitored beaches has increased from about 1,000 in 1997 to more than 3,500 out of approximately 6,000 beaches, as identified to EPA by the states for the 2004 swimming season.

- EPA has strengthened water quality standards throughout all the coastal recreation waters in the United States; the number of coastal and Great Lakes states with up-to-date water quality criteria has increased from 11 in 2000 to 35 in 2004.

- EPA has improved public access to data on beach advisories and closings by improving its electronic system for beach data collection and delivery systems; the system is known as "eBeaches." The public can view the beach information at http://oaspub.epa.gov/beacon/beacon_national_page.main.

- EPA is working to improve pollution control efforts that reduce potential adverse health effects at beaches. EPA's Strategic Plan and recent National Water Program Guidance describe these actions to coordinate assessment of problems affecting beaches and to reduce pollution.

- EPA is conducting research to develop new or revised water quality criteria and more rapid methods for assessing water quality at beaches so that results can be made available in hours rather than days. Quicker tests will allow beach managers to make faster decisions about the safety of beach waters and thus help reduce the risk of illness among beachgoers.*

While the progress we have made is impressive the BEACH Act can be improved to be even more effective in protecting public health, by incorporating new developments in the science behind water quality testing. Since 1986, the EPA has tested pathogens in the water through culture testing. Unfortunately, this antiquated method which is still in use today can take upwards of seventy-two hours to yield results. Conversely, new advances in molecular testing show tremendous promise, both in rapidly identifying potential pathogens in coastal waters, and in reducing the amount of time required to provide test results to appropriate public health officers.

Molecular testing has been shown to identify bacteria in only four hours, rather than seventy-two. Additionally, culture methods cannot differentiate between non-human and human organisms without additional testing. As a result, many beaches are closed unnecessarily and for too long due to detection of organisms that do not pose a threat to

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* Environmental Protection Agency, Implementing the BEACH Act of 2000, Report for Congress, October 2006, Available at: http://www.epa.gov/waterscience/beaches/report/full-rtc.pdf.

humans. Unlike culture methods, molecular tests can be designed to have unique specificity only for bacteria that are associated with human illness. This specificity is due to the molecular test's ability to recognize species specific bacterial DNA, a feature that prevents "false-positive" detection of irrelevant organisms.

In the past Congress, several of our House colleagues undertook efforts to reauthorize the BEACH Act. This renewed commitment underscores the importance of this legislation. I look forward to working with my colleagues and with this Committee, to ensure the reauthorization of the BEACH Act, so that the significant strides we have made to date can be sustained and enhanced.

To this end, I introduced H.R. 909, the Safe Water Improvement and Modernization (SWIM) Act of 2007. This legislation will reauthorize the programs in the BEACH Act until 2012 as well as authorize the EPA to complete a two-year study of the full capabilities of molecular testing. It is my hope that this study will open the door to quicker and more efficient testing times which will better protect the health and well being of those that want to enjoy our recreational waters.

Again, thank you for the opportunity to discuss the landmark BEACH legislation, and how we might continue to work together to build on its successes. I look forward to working with this Committee, and would be pleased to address any questions you may have.

STATEMENT OF
THE HONORABLE JERRY F. COSTELLO
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
HEARING ON "REAUTHORIZATION OF THE BEACHES ENVIRONMENTAL ASSESSMENT AND COASTAL HEALTH ACT
THURSDAY, JULY 12, 2007

Thank you, Madame Chairwoman, for holding this hearing on reauthorization of the Beaches Environmental assessment and Coastal Health Act.

Our nation has nearly 23,000 miles of ocean shoreline, more than 5,500 miles of Great Lakes shoreline, and 3.6 million miles of rivers and streams. As a life-long resident of a Great Lakes state, I am well aware of the importance of these vital natural resources to the economic health and well being of our state. Recreational activities support over 28 million jobs and lead to investments of over $50 billion in goods and services nationwide. These numbers remind us all how integral beaches, lakes, rivers and streams are to the regional economies and livelihood of those states that line their shores.

I am pleased that we are having a hearing on this to look at significant policy issues affecting our nation's efforts to restore and protect our shorelines. I welcome the witnesses here today, and look forward to their testimony.

Statement of the
Honorable John Mica

Hearing on
"Reauthorization of the Beaches Environmental Assessment and Coastal Health Act"
Water Resources and Environment Subcommittee

July 12, 2007

- I thank Chairwoman Johnson for holding this hearing on the reauthorization of the "Beaches Environmental Assessment and Coastal Health Act," also known as the "BEACH Act."

- Beaches are a part of the American experience. Not every Member of Congress represents a beach community, but every Member has constituents who enjoy beaches.

- Over 180 million people visit beaches every year, and those visits support more than 28 million jobs. In many parts of the country, including in my state of Florida, beaches are the economic driver of the region. When beaches have to be closed because of polluted waters, it is more than the tourist that suffers. The economy of the region suffers, too.

- The BEACH Act is focused on preventing human exposure to dangerous pathogens that can sometimes be found in recreational waters. It calls on states to adopt pathogen-related water quality standards that will protect human health. In addition, under the Act, EPA is making grants to states to help them implement beach water quality monitoring, assessment, and public notification programs.

- The BEACH Act has expired and needs to be reauthorized. I hope to hear today from the panels of witnesses about their experiences with the BEACH Act and how we might want to refine it as we consider reauthorization.

1

Statement of Rep. Harry Mitchell
House Transportation and Infrastructure Committee
Subcommittee on Water Resources and Environment
7/12/07

--Thank you Mr. Chairman.

--Beaches are important to all Americans, not just those who live along the coasts.

--They are essential national resources for recreation and leisure.

--Maintaining their safety is important for all of us.

2

--I am looking forward to hearing from today's witnesses how we can improve monitoring and notification of water safety issues.

--I yield back the balance of my time.

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Statement of Rep. Frank Pallone
House Subcommittee on Water Resources and Environment

Hearing on Reauthorization of the Beaches Environmental Assessment and Coastal Health Act
Thursday, July 12, 2007

I would first like to thank Chairwoman Bernice Johnson and Ranking Member Baker for conducting this important hearing. I would also like to specifically recognize Mr. Bishop from New York for his leadership on this issue. Our two offices have worked together in crafting what I believe is the most comprehensive beach protection legislation in our nation's history.

Across the country, American families and international tourists make over 2 billion trips each year to America's beaches to fish, sunbathe, boat, swim, surf, and bird-watch. Our coastal areas produce 85 percent of all US tourism dollars, fueling a huge economic engine.

Our nation's beaches are vital, not only to residents of our coastal states but also for countless visitors who come to visit each year. America's beaches are a tremendous resource for those who come to enjoy them, and they are a huge economic engine for our coastal states. In New Jersey alone, beaches are the primary driver of a tourism economy that provides nearly 500,000 jobs and generates $36 billion in economic activities for the state each year.

All summer long thousands of people flock to New Jersey beaches to enjoy everything they have to offer. It is my intension to assure those beach goers that our nations beaches are clean and safe.

2000 BEACH ACT

And thanks to the BEACH Act, a law that I helped to author back in 2000, we have made major strides over the last six years. The BEACH Act of 2000 helped us improve water quality testing and monitoring at beaches across the country, which is critical to protecting the health of beachgoers.

The Act had three provisions: requiring states to adopt current EPA water quality criteria to protect beachgoers from getting sick; requiring the EPA to update these water quality criteria, with new science and technologies to provide better, faster water testing; and providing grants to states to implement coastal water monitoring programs.

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New Jersey used some of this grant money to become the first state in the nation to launch a real-time website that notifies beachgoers of the state of our beaches.

THE BEACH PROTECTION ACT

Despite all the strong steps that coastal states and our nation have taken since the BEACH Act was signed into law, this Act can still be improved, and that's what Mr. Bishop and I had in mind when we introduced the BEACH Protection Act of 2007.

H.R. 2537, is a bill that will help ensure that beachgoers throughout the country can surf, swim, and play on clean and safe beaches.

This legislation not only reauthorizes the BEACH Act grants to states through 2012, but it also doubles the annual grant levels from $30 million under the old authorization to a new level of $60 million annually.
It also expands the scope of BEACH Act grants, from water quality monitoring and notification, to also include pollution source tracking and prevention efforts.

More importantly, this legislation goes further on environmental standards than any before by requiring tougher standards for beach water quality testing and communication.

The bill requires that beach water quality violations are disclosed not only to the public, but to all relevant state agencies with beach water pollution authority.

RAPID TESTING METHODS

The Beach Protection Act mandates the use of rapid testing methods by requiring the EPA to approve the use of rapid testing methods that detect bathing water contamination in 2 hours or less. Grantees must use those methods within one year of approval.

This is something that I have been advocating for the last several years. Current water quality monitoring tests, like those used in New Jersey, only test for bacteria levels and take 24 to 48 hours to produce reliable results. During this time many beachgoers can be unknowingly exposed to harmful pathogens. More immediate results would prevent beaches from remaining open when high levels of bacteria are found.

We are requiring each state receiving BEACH Act grants to:
Implement measures for tracking and identifying sources of beachwater pollution;
Create a public online database for each beach with relevant pollution and closure information posted; and
Ensure that closures or advisories are issued shortly after the state finds coastal waters out of compliance with water quality standards (within 24 hours of failed water quality test).

We are also holding states accountable by requiring the EPA Administrator to do annual reviews of grantees' compliance with BEACH Act process requirements. Grantees have one year to comply with the new environmental standards, or they will be required to pay at least a 50 percent match for their grant until they come back into compliance.

Mr. Chairman, protecting our coasts and oceans is critical to the local economies that depend on them for billions in tourism and recreation revenues. The BEACH Protection Act is certainly a step in the right direction.

Once again, I would like to thank the Chairman and the Ranking member for holding this hearing and for their leadership on this important issue. I look forward to working with my colleagues on protecting New Jersey's, and our nations, beaches for years to come.

Surfrider Foundation.

Testimony before the
U.S. House of Representatives Committee on Transportation and Infrastructure,
Subcommittee on Water Resources and Environment

Hearing:
"Reauthorization of the Beaches Environmental Assessment and Coastal Health Act"

On behalf of
The Surfrider Foundation

Thank you Madam Chairwoman, Representative Baker, and the members of this subcommittee for the opportunity to share our perspective on the Beaches Environmental Assessment and Coastal Health Act. My name is Mara Dias, and I am here before you today on behalf of the Surfrider Foundation.

The Surfrider Foundation is a grass-roots, non-profit environmental organization dedicated to the protection and enjoyment of the world's oceans, waves and beaches for all people, through conservation, activism, research and education. Our over 50,000 members come from all walks of life and backgrounds, and we visit the beach for many different reasons. What draws our diverse membership together is a love for the ocean and a strong desire to protect our oceans and beaches for everyone's enjoyment.

The Surfrider Foundation operates through a system of over 60 chapters located in almost every coastal state, and we are expanding internationally. On the local level our chapters are educating school children and members of the public on how to take care of our beaches and coasts. Our members are participating in water quality monitoring and scientific research programs, and we are working with local governments to ensure that coastal development is not harming our beach environment or taking away the public's right to access and use our beaches.

Poor water quality is real threat that concerns everyone in Surfrider. A recent recreational survey found that surfers spend more time in the ocean water than any other recreational user group. We have unfortunately taken on the role of the canary in the coal mine as the pollution of our beaches becomes more prevalent around this country.

Local surfers often turn to Surfrider when they believe they have become ill from surfing in polluted water. Many, if not all of our chapters, have fielded such complaints, and have in turn voiced inquiries to their local health departments. Along the Atlantic and Gulf Coasts surfers and swimmers are noticing flu-like symptoms after being in the

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water. In urbanized areas of California, poor water quality is unfortunately becoming commonplace. One study performed by University of California researchers measured a 10% increase in illness for each additional 2.5 hours of weekly water exposure from surfing at beaches impacted by urban runoff in Orange County, in comparison to surfers from the more rural watersheds of Santa Cruz County.

The Blue Water Task Force (BWTF) is the Surfrider Foundation's water quality monitoring, education and advocacy program. It is utilized by our chapters to alert citizens and officials in their communities about water quality problems and to work toward solutions. The BWTF has succeeded in raising public awareness of coastal water pollution levels and has precipitated the establishment of state and local government water quality monitoring programs in many communities. In my testimony I will be illustrating the successes and needs of the BEACH Act, by sharing with the committee some of our chapters' experiences interacting with state and local beach monitoring programs through the Blue Water Task Force.

The BEACH Act of 2000 is responsible for great improvements in beach monitoring programs in coastal states across the country. In some states, such as Washington, Wisconsin and Oregon, the passage of the BEACH Act marked the beginning of state coordinated beach monitoring programs. In other states, such as New Jersey, New York and California, the new federal funding was responsible for the growth of established monitoring programs as new beaches were added and sampling frequency increased.

As state beach monitoring programs have improved, the public is also becoming more aware of the water pollution problems that are affecting our beaches. Public demand and political will to find the sources of pollution and to take action to correct these watershed problems are growing. Often the source of bacterial pollution that is causing our beaches to fail water quality standards is stormwater runoff that flows across dense development and impervious surfaces in coastal watersheds. Many local governments are trying to lessen the impact of development on water quality by requiring the principles of Low Impact Development and Stormwater Best Management Practices to be employed during construction and maintenance.

In North Carolina, a major study is underway to characterize the pollutant load that is being carried onto the beaches and into the surf zone by stormwater pipes. The Outerbanks Surfrider Chapter has been following the progress of this study closely, and will be ready when the finding are released, to motivate local governments along these barrier islands to take action to improve water quality and safeguard public health at the beach.

The other major polluter of coastal waters is sewage. Combined sewer systems are overflowing almost daily in some cities during periods of wet weather. Sewage treatment plants are operating over-capacity in many coastal areas, and sewage is entering our waterways via overflows and leaks from old and failing sewer infrastructure. Many of our chapters in Florida are working with state and local governments to find responsible solutions for sewage handling and disposal as the state populations continues to grow.

While the BEACH Act has certainly provided better information to the beach-going public, perennial under-funding of this bill has prevented full state implementation and has left public health at risk in many instances. Many state programs are under-staffed as a consequence of inadequate funding, and they do not have the resources to meet all of their testing requirements. Many of the Surfrider BWTF beach sampling programs have been designed to fill in the gaps left by state agency programs.

As is the case in many cold water states, Rhode Island's Bathing Beaches Monitoring Program only conducts water sampling during the summer months from Memorial Day to Labor Day. Surfers, however, are in the water year-round. Even swimming remains popular into the warmer fall months. In order to provide year-round water quality information, the Rhode Island Chapter has been collecting water samples from over a dozen ocean beaches in collaboration with the University of Rhode Island's Watershed Watch program.

Surfrider members in both Delaware and New Hampshire are working in collaboration with their state agencies to extend the beach monitoring season beyond the summer months without adding further financial or staff burden to the states. In Delaware, Surfrider volunteers began collecting water samples year-round and delivering them to the University of Delaware's School of Marine Studies for analysis after the chapter received numerous complaints from local surfers who got ill after surfing in the waves generated by a fall storm. In New Hampshire, the Department of Environmental Services (NHDES) applied for additional funding from the USEPA to extend their sampling program into the fall and spring seasons after the local Surfrider chapter expressed their concerns over the lack of water quality information for most of the year. The NHDES now provides supplies and training to the Surfrider volunteers, who in turn collect the ocean beach water samples.

In addition to seasonal gaps, inadequate funding has also resulted in geographical gaps in state beach monitoring programs. In Mendocino, California, Surfrider volunteers have been collecting water samples from some of the more remote beaches and delivering them to the Mendocino County Environmental Health Department to increase the coverage of the County's beach monitoring program. The County does not have the staff resources available on their own to visit all of its bathing beaches on a regular basis.

Limited funding for staff often forces state programs to prioritize which beaches they will sample. While high priority beaches can be sampled upwards of 3-4 times per week, other lower priority beaches are only visited monthly or yearly, leaving the actual water quality at these beaches uncertain for most of the year. State and county health departments often choose to monitor the beaches where they know there are water quality problems, rather than devote precious staff time and laboratory resources sampling beaches that have not been problematic in the past. Unfortunately this leaves public health at risk. Both in Oregon and New Jersey, Surfrider BWTF data have been shared with the state programs to demonstrate new water quality concerns. As a result, beaches

have been added to the agency monitoring programs that were not previously being sampled.

If federal funding were appropriated at the levels recommended by the Beach Protection Act of 2007 introduced by Representatives Pallone and Bishop, I believe many of the gaps and problems with current state implementation could be corrected.

Surfrider is also pleased to see language included in this bill allowing states to use their BEACH grants to investigate the sources of beach water pollution. When people see the no swimming signs posted at their beaches, their first question is almost invariably, "Why?" We need to be providing the answer to this question, so that coastal communities can take action to correct their water quality problems, and the signs can be taken down for good.

Currently, Surfrider is working with many local governments and agencies to secure funding to perform source tracking studies. In California, the San Luis Bay Chapter has cooperated with the County Health Department and City of Pismo Beach to submit a grant application to the California State Water Quality Control Board to determine what has been causing Pismo Beach to regularly exceed the national standard for bacterial pollution. Likewise, the San Mateo County Chapter has applied to the Water Quality Control Board for funding to track the source of pollution at the impaired, 303D listed Capistrano Beach. Further up the coast in Oregon, the Newport Surfrider Chapter is putting up its own money and is working hard to obtain match funding from other environmental organizations and agencies to identify what is contributing to the bacterial contamination of Nye Beach.

There is certainly a great need in every coastal state to have better information available on what is causing our water quality problems, so that coastal communities can target these sources with effective management programs and practices. The Beach Act is an appropriate vehicle for the federal government to begin to do more to protect public health by providing financial assistance to coastal communities to fix their beach pollution problems.

The Surfrider Foundation also agrees with the authors of the Beach Protection Act of 2007 that EPA needs to begin approving new methods that will give beach managers water quality information within a couple of hours. Current methods employ a 24-hour incubation period, so you know today that the beach was polluted yesterday. Many states also resample after receiving a result that does not meet the standards, so it may be over 48 hours before a water quality problem is confirmed and decisions are made to close beaches or to issue swimming advisories. The other consequence of relying on the lengthy testing procedures, is that many states take a more cautious approach and close beaches preemptively after heavy rain, not knowing whether the water is polluted or not. They then have to wait at least 24 hours to confirm if the water is safe for swimming, which could leave many beaches closed when the water is actually fine.

This happened just the past holiday week on Long Island, New York. Heavy rain and thunderstorms on July 4th & 5th caused preemptive beach closures to be issued in Nassau and western Suffolk Counties.

We certainly should be able to do better than this. Great advancements in method development have been made recently in the research community. The EPA needs to develop a sound, but streamlined process to approve these new rapid methods. Relying on the old, time-consuming water testing methods is putting public health at risk and hurting the economy of coastal communities that rely on the tourism industry generated by clean, healthy beaches.

This panel, however, should consider the timeline this legislation sets for state implementation of newly approved methods. One year after approval may not be feasible. The new rapid methods that are now available, would require the states to not only purchase new and expensive laboratory equipment, but they also would either have to hire new employees or get their current employees the training they would need to run these highly specialized and technically demanding methods. Additionally most agencies would likely want to run the new methods simultaneously with their current methods for at least one season, as many did when they adopted new standards in 2004. This would allow them to work out any problems with their new sampling procedures and give them confidence in their results. Perhaps, it would be would be better to require the states to submit a plan for implementing rapid testing methods within a year of EPA adoption.

There are rapid methods available now that the EPA should be considering for approval. If the EPA is able to move quickly towards the approval process, we should be able to see these methods being used at our beaches within a few years, even giving time for state budgeting, procurement and training needs. I would recommend that the subcommittee seek input from some of the state agencies on this specific provision and to be fully aware that any change in methodology is going to take a significant financial investment for equipment purchases and staff training.

In the Great Lakes region some coastal states are using water quality models to augment their beach monitoring programs. Models have been developed that are allowing beach managers to predict water quality based on weather and physical conditions of the water and make beach closure decisions almost instantaneously. Frustration, however, has been expressed from some of states because they are not able to use their BEACH grant funds to help develop or support their water quality modeling systems. Supporting the states in their endeavors to develop accurate water quality models may be an even quicker route to supporting rapid assessment of beach water quality and timely public health decisions.

The Surfrider Foundation is also supportive of this bill's requirements that state programs create public online databases. Many states already have these resources but there is discrepancy amongst states on the quality, quantity, and timeliness of information available. Speaking to our members across this country, it is very evident that there is a very high level of variability in how the states are implementing the BEACH Act.

Variability exists in the manner in which samples are collected, how beach management decisions are made, what decisions are made, and the manner in which the public is informed of beach advisories and closings.

The EPA should take a stronger leadership role through the proposed annual reviews, to set the bar for some of the state programs whose programs are not as robust as the more experienced states who have been coordinating beach programs for decades and putting significant resources into their monitoring programs. In particular, we suggest that the EPA take a close look at how beaches are being posted. This has been an area of concern for many of our members. At Pismo Beach in California, cardboard signs that were not standing up to the elements were previously being used to post swimming advisories. Through the cooperation of the local chapter and a newly formed Pismo Beach Water Quality Group, new permanent signs are now being developed and posted at the beach.

Additionally, in Corpus Christi, Texas, the City has refused to post swimming advisories at beaches even when directed to do so by the Texas Beach Watch Program. This refusal seems to stem from fears that the signs will drive tourists away and hurt the local economy. The Texas Coastal Bend Chapter has been trying to educate city officials on how issuing swimming advisories and posting beaches can actually be protective of the tourism industry, and will protect the Corpus Christie from the certain economic disaster that would occur if a number of tourists became ill and the proper warnings were not in place.

In closing, Madame Chairwoman, the Surfrider Foundation would like to thank this committee for hearing the perspective of our members who are at the beach and in the water daily. We also urge Congress to consider the real costs of running comprehensive state beach monitoring programs that are in the best interests of public safety, the environmental health of our beaches, and the vitality of our coastal economies.

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Heal the Bay.

Hello, my name is Dr. Mark Gold, President of the Los Angeles environmental group, Heal the Bay. Thank you for the opportunity to testify on the BEACH Act amendment legislation. I have spent over twenty years working on beach water quality issues. As background, I was a co-author of the 1995 Santa Monica Bay epidemiology study on swimmers in runoff contaminated waters, a participant in EPA's Experts scientific workshop on critical needs for the development of new or revised recreational water quality criteria, helped author California's beach water quality standards, monitoring and notification law, helped create the California Clean Beach Initiative which has allocated over $100 million to clean up the state's most polluted beaches, and I created Heal the Bay's Beach Report Card which provides weekly grades for nearly 500 California beaches on an "A" to "F" basis based on fecal bacteria densities.

Heal the Bay strongly support Representative Pallone's bill, HR 2537, because it provides a substantial and necessary funding increase to the program. To date, only $62 million over seven years has been made available for this program and the results have been predictable: far too many heavily visited beaches are not monitored or monitored infrequently and inadequately. Also, in many states, the public is ill informed about water quality at their favorite beach. A day at the beach should not make you sick, but inadequate monitoring and poor public notification can lead to millions of swimmers unknowingly exposed to unacceptable health risks. In addition, Heal the Bay has the following recommendations:

- EPA's 2002 monitoring and assessment performance criteria were generic, advisory in nature, and they were only guidance. Please amend the bill as follows: EPA shall develop a baseline beach monitoring and public notification program that shall be used to determine eligibility of states for BEACH Act grant funding. The program shall include criteria for which beaches must be monitored based on visitorship and proximity to potential pollution source, minimum monitoring frequency, sample collection requirements, analytical methods, beach closure requirements for sewage spills, and public notification requirements. If a state does not utilize a program that meets or exceeds the baseline program, then they are not eligible for Beach Act funds.

This amendment is critical to insure that monitoring results between states and even counties are comparable. For example, currently one can not compare water quality in Florida, New Jersey, Hawaii or California because the programs are all so different. Using a metric of number of beach closures or postings to compare counties and states only provides meaningful information if monitoring programs are comparable. Eligibility criteria are commonly used in Federal grant programs to ensure high quality projects, and the same incentive for effective and protective monitoring and public notification programs should occur for BEACH act funding.

As you know, the recreational waters criteria development requirement for pathogens and pathogen indicators was not met by EPA. As a nation, we are still relying on criteria based on epidemiology studies completed in the 1970s. Many studies have been completed subsequent to EPA criteria development and some extraordinary studies are going on as I speak. Please require EPA to look at the results of all pertinent studies completed since 1985, for criteria

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development. Also, please require the EPA to protect swimmers in fresh water and marine waters equally – a major shortcoming in the current criteria. And the most sensitive population of swimmers, children, must be protected under the new criteria. Also, if the EPA should choose to eliminate an indicator for criteria use – like E. coli in fresh water, then the agency must provide scientific substantiation for eliminating the criterion. Finally, criteria development must take into account different sources of pathogens. In the past, the EPA has focused on sewage sources in temperate waters. The new criteria must take into account differences between temperate, subtropical and tropical waters, and sewage, urban runoff, and non-point source runoff (confined animal feedlots, agriculture and septic systems) sources. All of these recommendations are in the recently released Experts Report.

In conclusion, despite my strong recommendations on improvements necessary to strengthen the Beach Act, I want to thank EPA for their efforts on the experts workshop and their unbelievable cooperation in providing funding for a health effects study in Avalon on Catalina Island that will start at the end of the month. Congress has a great opportunity to turn a good law into an effective law that will protect the health of hundreds of millions of swimmers every year. Thank you for the opportunity to speak.

TESTIMONY OF BENJAMIN H. GRUMBLES
ASSISTANT ADMINISTRATOR FOR WATER
U.S. ENVIRONMENTAL PROTECTION AGENCY

BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES

July 12, 2007

Madam Chairwoman and members of the Subcommittee, I am Benjamin H. Grumbles, Assistant Administrator for Water at the United States Environmental Protection Agency (EPA). Thank you for the opportunity to discuss the accomplishments of and the challenges for the Beach Program, EPA's current actions to further advance the Beach Program, and our vision for the future of this national public health activity.

America's oceans and coasts are a national treasure. The President has proclaimed June 2007 as National Oceans Month. Our nation's ocean, coastal, and Great Lakes waters have enormous environmental and economic value. In the words of the U.S. Commission on Ocean Policy, "Our oceans and coasts are among the chief pillars of our nation's wealth and economic well-being." More than half of the country's population lives near a coastal area, and the great majority of Americans visit coastal areas to participate in recreational activities. More specifically, it is estimated that one third of all Americans visit coastal areas each year making a total of 910 million trips while spending over $40 billion annually.

Protecting the beach-going public from illness is a national priority. Since the Beaches Environmental Assessment and Coastal Health (BEACH) Act's enactment in 2000, EPA, States,

and local partners have made substantial progress in implementing its requirements and taking actions to protect the health of swimmers in our coastal recreation waters.

In this testimony, I will describe recent EPA work to support beach monitoring and public reporting; our activities to strengthen existing water quality standards; research to support developing new or revised recommended water quality criteria for the purpose of protecting human health in coastal recreation waters; and cross-Agency efforts to leverage other Clean Water Act programs to reduce pollution and sources.

Although we have made substantial progress in implementing the BEACH Act, I want to be clear that EPA recognizes there is important work left to do in the areas of additional research and updating existing recreational criteria. As I will describe further, EPA and others have conducted a substantial amount of research since 2000. More studies are needed to create a sound scientific foundation for new criteria, as I will discuss later.

I. Achievements

In order to better frame a discussion of ongoing and future activities, I would like to begin by highlighting some of the significant accomplishments that EPA has achieved under the Beach Act since 2000, in partnership with States and Territories .

- States have significantly improved their assessment and monitoring of beaches; the number of monitored beaches has increased from about 1,000 in 1997 to more than 3,500 in 2006.

- EPA has strengthened water quality standards throughout all the coastal recreation waters in the United States. All 35 States and Territories with coastal recreation waters now have water quality standards as protective of human health as EPA's recommended water quality criteria – an increase from 11 States and Territories in 2000.
- EPA has improved public access to data on beach advisories and closings by improving the Agency's electronic beach data collection and delivery systems. Today, BEACH Act States easily transmit data to EPA on their Beach Monitoring and Notification Programs through a system known as "eBeaches." The data is uploaded onto a nationally-accessible Internet site that is easily reached by the public.
- In the area of research, EPA has conducted cutting-edge research on the use of molecular-based methods for more quickly detecting indicators of fecal contamination in coastal waters. The Agency's Office of Research and Development has also completed critically needed epidemiological studies correlating the results from these methods to the incidence of gastro-intestinal illness. These molecular methods show great promise for providing quicker test results and allowing beach managers to make faster and better decisions about the safety of beach waters. Faster and better decisions are good for public health and good for the economy in beach communities. We share the goals of the public and State beach managers for making the best decisions possible about keeping beaches open or placing them under advisory.

II. Current Efforts

A. Improving Beach Monitoring and Public Notification

One of the best indicators of progress to date is the fact that all eligible States and Territories are now implementing the beach monitoring and public notification provisions of the BEACH Act.

BEACH Act Grants

EPA's Beach Act grants are a cornerstone for Clean Beaches Program. As you know, the BEACH Act authorizes and Congress appropriates funds for EPA grants to States, Territories, and Tribes to develop and implement monitoring and notification programs. Since 2000, EPA has awarded approximately $52 million of grant funds under the BEACH Act to all 35 eligible coastal and Great Lakes States and Territories. We expect to award approximately $10 million dollars more this year.

EPA has been evaluating whether to revise the existing allocation formula for distributing beach grant funds. EPA has awarded grants to all eligible States that applied for funding using an allocation formula that the Agency developed in 2002. EPA consulted with various States and other stakeholders to develop a formula that uses three factors—beach season length, beach miles, and beach usage. (Because the data for beach miles and beach usage were not readily available, shoreline length and coastal population have been used as "surrogates.") This formula has been effective in creating a strong foundation for the current program, but it presently does not have the flexibility to adjust new year grant allocation levels to reflect the level and rate of grant utilization in prior years.

In 2006, EPA formed a State/EPA workgroup to examine the current formula, assess current programs and their monitoring/notification practices and develop options for possible changes to the allocation formula. EPA reviewed a number of allocation formula scenarios during the course of this process. One of the key issues identified by the State/EPA workgroup is how to ensure that

any readjustment to the formula does not occur at the cost of a particular State being unable to continue its current monitoring and reporting activities. No final decision on possible allocation formula revisions has been made at this time.

As we look at different allocation formula scenarios, we are completely mindful of the need for maintaining State programs. EPA plans to request public comment on a range of different options later this fall. We look forward to receiving valuable information and feedback from States, beach monitoring groups, and interested stakeholders on how to proceed forward.

B. Program Development and Implementation

National Beach Guidance and Required Performance Criteria for Grants

To ensure effective use of BEACH grants, EPA has undertaken a substantial collaboration effort with States and interested parties to develop a basic framework for beach monitoring and notification programs. The Agency issued comprehensive national guidance in June 2002 which specifies nine performance criteria for implementing State beach monitoring, assessment, and notification programs.

State and Local accomplishments

The real "on the ground" effect of this guidance in combination with annual grants has been to enable the States and Territories to establish or greatly improve their beach programs. The strength of these programs is described in EPA's 2006 Report to Congress on the BEACH Act which contains 15 pages of state-by-state program summaries followed by another thirty pages of detailed accomplishments.

eBeaches – Public Reporting

The BEACH Act also directs EPA to establish, maintain, and make available to the public a national coastal recreation water pollution occurrence database. In response, EPA has established an online electronic data collection and reporting system called "eBeaches". The system provides for fast, easy, and secure transmittal of beach water quality data; it improves public access to state-reported information about beach conditions (along with information on health risks associated with swimming in polluted water); and it saves time and money by allowing electronic data transfer and eliminating paper forms and outdated methods of data entry.

National List of Beaches

The BEACH Act also directs EPA to maintain a publicly available list of waters that are subject to a monitoring and notification program, as well as those not subject to a program. States and Territories with BEACH Act implementation grants identify lists of coastal recreational waters that are subject to the program and submit this information to EPA.

The Agency has compiled this information into the National List of Beaches; the list was published in the Federal Register on May 4, 2004 (69 FR 24597); and the list will be updated as new information becomes available from States and Territories. The list provides a national picture of the extent of beach water quality monitoring, and the States are using their BEACH Act grants to refine their inventory of beaches.

Great Lakes Sanitary Survey

The Great Lakes Regional Collaboration recommends activities to improve beach water quality. To that end, EPA is working with the Great Lakes States to develop and conduct beach sanitary surveys to identify sources of contamination at Great Lakes beaches. These surveys also will help beach managers inform the public about any potential pollution impacting a beach, which will support the public in making better informed decisions before swimming to reduce their risk of swimming-related illness. The final sanitary survey form has been developed and is ready to be pilot tested. EPA's Great Lakes National Program Office has worked tirelessly to prepare grants using funds appropriated in FY 2007 to fund pilots at 60 Great Lakes beaches, including beaches on each of the Great Lakes, in the near future.

I am pleased to report that six of the seven states (Michigan, Minnesota, Wisconsin, Illinois, Pennsylvania, and New York) that applied for a sanitary survey grant have received their award.

C. Conducting Research on Critical Science Issues

Current Research Accomplishments

As I mentioned in my opening statement, a key area of remaining work under the BEACH Act is to complete the science to support developing new or revised recommended recreational water quality criteria. Under CWA section 304(a)(9), EPA is required to publish new or revised water quality criteria for pathogens or pathogen indicators for the purpose of protecting human health in coastal recreation waters. Under section 104(v) of the CWA, EPA is required to complete studies to provide additional information for use in developing these new or revised recommended water quality criteria.

To date, EPA has conducted significant research on the use of molecular-based methods to allow faster reporting. The Agency also has completed critically needed epidemiology studies in fresh waters. EPA has also completed the first comprehensive study evaluating how different factors such as water depth, distance from the beach, and time of day affect an individual's exposure and potential risk from swimming.

EPA's NEEAR Water Study and Methods Development

EPA's Office of Research and Development (ORD), in consultation with the Office of Water, initiated the very comprehensive National Epidemiological and Environmental Assessment of Recreational (NEEAR) Water Study in 2001. It is a collaborative research study between EPA and the Centers for Disease Control (CDC). EPA is also coordinating the study with the U.S. Geological Survey (USGS) and other interested agencies.

The indicators and rapid methods that EPA is evaluating through the NEEAR study are DNA-based microbiological indicators of fecal contamination. The goal of the NEEAR research is to produce information defining the relationship between water quality, as measured with rapid indicators of fecal contamination, and swimming-associated health effects.

Indicator Methods Development

The goal is to help beach managers to quickly test the water in the morning and make results about the safety of beach waters available in hours, rather than days. Providing faster results to beach managers and the public should help reduce the risk of waterborne illness among beachgoers as well as re-open the beach earlier. A number of rapid methods were evaluated for potential use in the NEEAR Water Study, but only the few that met EPA's performance criteria

were ultimately included. One of the more promising methods that EPA is evaluating is a molecular method called the Quantitative Polymerase Chain Reaction (qPCR) Method.

Epidemiology Study

The second part of the NEEAR Water Study includes epidemiology studies that combine health data and water quality analyses using the selected indicator methods. The epidemiology studies measure human health outcomes including gastrointestinal illness; ear, eye, and respiratory infections; urinary tract infection; and skin (rash) endpoints.

The NEEAR Water Study team has completed four summers of data collection. These studies included a one-year pilot study and two full-year studies in the Great Lakes. In addition a partial study was conducted along the Gulf coast. EPA also conducted a recreational monitoring characterization study before starting the Great Lakes studies. The data demonstrate that swimmers exposed to higher levels of indicators as measured using rapid methods, experience more illness than non-swimmers, or swimmers exposed to lower levels of indicators. Analysis of the data from these Great Lakes studies shows a promising relationship between one of the rapid indicators methods (qPCR) and gastro-intestinal illness among swimmers.

Monitoring and Modeling Studies

EPA has also been working to improve the science and integration of monitoring and modeling for microbial contamination in coastal recreation waters. My earlier discussion describes some of EPA's efforts in this area. There are also other EPA efforts to improve monitoring methodologies and techniques for coastal recreation waters. The Agency wants to help beach managers with their efforts to provide the public with real-time information on the condition of their beaches, and EPA is

working on predictive modeling tools that promise faster results than single sample daily monitoring. The USGS, supported in part by EPA also is working on the development and use of predictive models to deliver near-real time data on the public health acceptability of beaches in some area of the Great Lakes.

III. Lessons Learned From Beach Act Implementation

EPA is working to publish new or revised recommended water quality criteria as required by the BEACH Act. There are many significant science issues that we believe need to be addressed, and we are addressing them.

A. Agency Efforts to Address Scientific and Policy Questions

EPA's review of existing science and our research results have raised a series of very significant scientific and policy questions. Foremost among these questions are:

- How should we address the geographic and temporal variability in beach water quality?
- How well do the new molecular methods work and how could they be applied in other Clean Water Act programs (such as beach notification, discharge permits, water quality assessments and TMDLs)?
- How should the criteria address the difference between the health threats posed by human vs. non-human sources of pollution?
- How can we best address significant variability in measurements at beaches—spatially and temporally?

We need to allow the science to inform our decisions—we do not want to move too quickly—for acting quickly without a sound scientific foundation can result in economic consequences for the economies of coastal zones or impacts on public health.

Despite these challenges, I am happy to report that our efforts in implementing the BEACH Act have not only provided people with up-to-date information to enable them to make risk management decisions, but it has also served as a motivator for people to identify sources of contamination and to take action.

B. Cross-Agency Activities

The authors of the Clean Water Act had great foresight. They believed something had to be done to defend America's water, and they understood that meeting the goals of the Clean Water Act depended on both the long-term protection of water quality and the involvement of federal, state and community partners.

We recognize that the BEACH Act focus on protecting coastal recreation waters also extends to protecting America's coastal estuaries, and our National Estuary Program has done significant work in restoring and protecting our country's watersheds. The National Estuary Program's collaborative approach to addressing watershed protection and restoration is proving to be an effective model for how federal, state, and community partners can work together effectively. After two decades of building partnerships across each of the 28 nationally-recognized watersheds, we are seeing impressive environmental results.

In December 2004, this Administration released a comprehensive Ocean Action Plan (OAP) including 88 actions and a set of principles to strengthen and improve U.S. ocean policy. The OAP aligns with a number of EPA priorities, including improving water quality monitoring and supporting regional, watershed-based collaboration for protecting the health of our Nation's ocean and coastal waters.

I mentioned earlier the Great Lakes Regional Collaboration and EPA's work with the Great Lakes States to develop and conduct beach sanitary surveys to identify sources of contamination at Great Lakes beaches.

EPA has also been working across Agency programs to control bacteria/pathogen input into waters from Combined Sewer Overflows (CSOs) which occur in 770 communities around the country. CSOs can affect the quality of recreational waters by releasing untreated wastewater potentially containing high levels of pathogens. EPA, states, and local governments are making steady progress toward reducing overflows under the 1994 CSO Policy. The Agency is also working very closely with particular states, such as Indiana, to ensure that water quality standards, permitting, and enforcement are effectively coordinated so the entire water program is best leveraged for reducing the impact of CSOs. EPA is also encouraging state, tribal and local governments to adopt voluntary guidelines for managing on-site/decentralized sewage treatment systems and using Clean Water Revolving Loan Funds to finance systems where appropriate.

IV. Future Challenges

A. Identifying Future Science Needs

The BEACH Act requires EPA to develop new or revised recommended water quality criteria for coastal recreation waters. Since EPA issued its current recommended recreational water quality criteria over 20 years ago, there have been significant advances in molecular biology, microbiology, and analytical chemistry that should be considered and factored into the development of new or revised criteria. EPA has been working to consider these advances as it develops the scientific foundation for new criteria. EPA decided that the best approach to complete development of that scientific foundation would be to obtain individual input from members of the broad scientific and technical community on the critical path research and science needs for establishing scientifically defensible criteria by 2012.

Accordingly, EPA held the *Experts Scientific Workshop on Critical Research Needs for Developing New or Revised Recreational Water Quality Criteria,* on March 26-30, 2007in Warrenton, Virginia; and invited 42 outstanding national and international technical, scientific, and implementation experts from academia, Federal, State, and local government, and interest groups.

We brought together U.S. and international experts to obtain individual input on the critical path research and science needs for developing scientifically defensible new or revised Clean Water Act Section 304(a) recreational water quality criteria. A Report from that meeting identified critical science issues for further study. The report is available online at www.epa.gov/waterscience/criteria/recreation. These issues include:

- Need to determine potential human health impacts from different sources of fecal contamination;

- Need to determine potential human health impacts from pathogens in waters across different climatic and geographic regions;
- Need to determine an appropriate risk level for the most sensitive subpopulation(s); and,
- Need to identify appropriate indicators and methods for measuring fecal contamination.

This expert report will be considered by EPA as we develop a science plan to help address the previously mentioned critical issues necessary to develop recreational water quality criteria. The science plan will further inform the Agency as it sets overall research priorities.

V. Conclusion

We have made significant progress in the implementation of programs and practices to protect our coastal recreational waters. EPA plans to continue this work to achieve the BEACH Program's long-term goals.

We will continue to work with this Committee, our Federal and State partners, and the many stakeholders and citizens who want to accelerate the pace and efficiency of coastal recreational water protection and restoration.

This concludes my prepared remarks; I would be happy to respond to any questions you may have.

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July 6, 2007

US House of Representatives
Committee on Transportation and Infrastructure
Subcommittee on Water Resources and Environment
Washington D.C. 20515

Southampton, New York: Southampton Town Supervisor Patrick A. Heaney's; written testimony to the Subcommitee on Water Resources and Environment regarding the "Reauthorization of the Beaches Environmental Assessment and Coastal Health Act" on July 12, 2007

The Town of Southampton is a coastal community of 59,000 residents, who live 70 miles east of New York City on the narrow south fork of Long Island, between two of our nation's most economically and ecologically significant waterways: the Peconic Estuary, which is included in the National Estuary Program, and the New York State designated Long Island South Shore Estuary Reserve. **Along with over 300 miles of bay shoreline and 19,000 acres of inland tidal areas, we're also naturally blessed by nearly 20 miles of pristine Atlantic Ocean beaches,** which have been ranked as some of the best beaches in America and as some of the finest vacation spots in the world.

Southampton beaches and their adjacent bays and ocean waters are the lifeblood of the Town. The summer season draws hundreds of thousands of residents and visitors to our beaches from all over the world. These visitors come to enjoy the exceptional recreational experiences of our coast and, in doing so, contribute millions of dollars to local economy throughout Long Island's East End. Visitors to our area are attracted to our coastline, by our beautiful ocean waves and pure white sands, as well as by our pristine waters, magnificent scenery, abundant fishing, farmland, recreational boating, gourmet dining, parks and hiking trials, lush wetlands, and magnificent bays.

Concern for our beaches is deeply rooted in our cultural traditions, as Southampton's coastal resources have a long and rich history. From an early period of native American fishing, hunting, oyster harvesting, and near shore whaling, to present

day commercial fin fishing and shell fishing, generations have depended on the resources of the coast, and have enjoyed a unique quality of life on Southampton's shores that is we believe is simply unmatched nationwide. From these roots, arose a maritime heritage and cultural attachment to the shore that belongs not only to the past, but also to present and future generations of Southampton Town.

Today, thousands of jobs and millions of dollars of revenue are still dependent on the traditional maritime industries of our beaches and adjacent waters. **The commercial fishing fleet at Shinnecock Inlet in Hampton Bays, is the second largest in the State of New York, with nearly 50 local and transient commercial trawlers operating out of the port year round. Collectively, several thousand commercial and recreational fishermen fish our local waters, with dockside value of all fish landed likely totaling at least $16 million per year.**

Southampton's public beaches are our No. 1 tourist and recreational destination. Each summer, our population nearly triples, **with attendance totals at our public beaches reaching approximately 370,000 last year. Southampton Town generated nearly $1 million in direct revenue from Town beach access permits in 2006.** Beachgoers also pump millions of dollars into the regional economy, through monies spent on recreational boating, swimming, diving, shopping, kayaking, sailing, birding, second home development, and eco-tourism, and are the economic mainstay for local restaurants, stores, and service industries throughout Long Island's East End.

In terms of biodiversity, our local beaches, estuaries and offshore waters are irreplaceable, as they provide us with ecological services valued in the millions. They support nearly 200 rare and uncommon species of animals and plants. These species include federally threatened sea turtles, shorebirds, raptors, offshore whales, and rare plants, as well as nearly 150 species of fish and shellfish critical to the marine ecology and economy of our Town.

Pathogen inputs to the Peconic and South Shore Estuaries are presently a significant concern, because of the potential human health risks and the economic losses associated with the closure of shellfish beds and public bathing beaches. Our local bays are critical spawning grounds for nationally significant bay scallops and commercially vital finfish, which have sharply declined in numbers, due to excessive nutrients, low oxygen levels, contamination of shellfish beds, and recurring Brown Tide. Millions of dollars are being spent by the National Oceanic and Atmospheric Administration (NOAA), the U.S. Environmental Protection Agency, New York State, Suffolk County, Brookhaven National Laboratory, Stony Brook University at Southampton, The Nature Conservancy, the Town of Southampton, and other organizations to support pathogen management and Brown Tide research, in order to improve water quality in our area. However, additional research and funding is needed to keep our beaches clean.

Preserving clean and sustainable beaches and healthy recreational waters is one of the highest priorities for the Town. Tremendous advances have been made to clean up water quality and beaches, by controlling pollution and pathogens from non-point

sources, such as road runoff and boat septic wastes. Our non-point source pollution education began with the Town of Southampton's 1993 passage of its own Clean Water Bond Act, which provided an ongoing source of local funding to clean up the area's roads, which continues today. Since then, the Town has received matching funds from the State and the County, which have enabled us to spend millions of dollars, to implement structural storm water management actions along hundreds of miles of shore fronting roads.

Thanks to federal assistance, the Town also has in place a very successful mobile vessel pump-out program to eliminate boat wastes, with seven 23 ft long boats in operation seven days a week between Memorial Day and October 15th each year. Last year, we pumped free of charge, close to 100,000 gallons of septic waste, from recreational boats in the Peconic and South Shore Bays.

To combat the loss of precious beaches and wetlands, the Town of Southampton has in place a Community Preservation Fund, a 2% real estate transfer tax which has generated $250 million over the last eight years for land and water preservation. **Of this, the Town has $34.5 million to purchase nearly 200 acres of beach land; plus another $215 million on open space and wetlands preservation; historical preservation and recreational facilities.**

Working together with the State of New York, the County of Suffolk, and the Town's seven incorporated villages, Southampton is continuing to work towards safeguarding additional critical stretches of coastline, expanding public access to this magnificent resource, and contributing greatly to local maritime businesses and our quality of life. Voters town wide have continued to send a strong message to the Town to protect our beaches and coastal shorelines, by supporting, in 2006, a ten year extension of the Town's Community Preservation Fund to 2030.

Effective restoration of our living marine resources is likewise being achieved through partnerships and collaboration at all levels of government. Matching funds from the State and County have enabled the Town to be very proactive in its efforts to implement key recommendations from ten years of studies to restore the Peconic and South Shore Estuaries. These local initiatives include, among others, water quality monitoring, scallop seeding, shellfish population surveys, aquaculture pilot projects, residential and commercial fuel oil tank removal rebate programs, and restoration of our beaches, dunes, wetlands, and eelgrass beds.

Since the 1985 collapse of the bay scallop harvest, some of the baymen have become innovative and are harvesting fish and shellfish in cages sunk in open water. Mecox Bay is the area's only historically indigenous oyster population. Some baymen have turned to growing them in a highly controlled manner; farming oysters affords harvesters some particularly unique benefits and shellfish farming is widely considered to be less invasive and wholly beneficial for the surrounding environment. Some two dozen baymen have been growing out oysters in racks in the state-controlled waters of Peconic Bay. Further, five local fishermen were given permission over the last year by the

Southampton Town Trustees for shellfish farming, known as mariculture or aquaculture, in town-controlled Cold Spring Pond as a part of a pilot program intended to test the viability and compatibility of small scale aquaculture with town interests.

We urge you to continue to act to protect our coastal resources, so that we can further these important water conservation initiatives, and so that we can leave for future generations, beaches as beautiful and magnificent, as those that we are blessed with today. Our maritime resources and beaches are not only crucial to maintaining our economic health and recreational pursuits, but are critical to maintaining our very way of life. On behalf of the residents of Southampton and our neighboring communities, I thank you for this opportunity to speak to the vital need for the your ongoing support to protect our beaches.

TOWN OF SOUTHAMPTON, NEW YORK

Southampton Beaches:

- **Miles of Ocean Coastline-- 20 miles**
- **Miles of bay coastline—300**
- **Tidal surface waters constitute about 19,310 acres of tidal area, distributed among bays, coves, ponds and creeks.**

Beachgoers:

Southampton Town Parks Department reported in 2006 that 39,927 beach access were sold. The estimated number of attendees at the Southampton beaches in 2005 was 365,606; and in 2006 beach attendees were estimated at 370,000.

Revenue received per permits:

Non Resident -	**$527,285.00**
Resident -	**440,310.00**
Total	**$967,595.00**

Coopers Beach in Southampton Village, an incorporated village with the boundaries of the Town of Southampton, was ranked third in 2007 by Dr. Stephen Leatherman, director of the coastal research laboratory at Florida International University the "10 Best Beaches in America" list for its width, superb water quality, health of dunes and vegetation, environmental quality of the sand, safety records, parking, and facilities. (East Hampton Village's Main Beach, just 8 miles east of Southampton Town border was ranked seventh.)

Ocean Beaches in Southampton Town:

Pikes Beach
Tiana Beach Oceanside
Ponquogue Beach
Flying Point Beach
W. Scott Cameron Beach
Mecox Beach
Sagg Main Beach
Foster Memorial Beach

Second Home Owners/Tourists:

Annual population—59,000
Residence Owners Receiving Tax Bills Outside of the Town – 15,294
Estimate summer population in Southampton - 170,000

Commercial Fishing Industry:

The commercial fishing fleet at Shinnecock Inlet in Hampton Bays, is the second largest in the State of New York, with nearly 50 local and transient commercial trawlers operating out of the port year round. Several thousand commercial and recreational fishermen fish our local waters, with dockside value of all fish landed likely totaling at least $16 million per year.

CLAMMING As per the Peconic Baykeeper – Kevin McAllister:

- **Clam Diggers Licenses issued in 2004 – 184**
- **Southampton South Shore Commercial Hard Clam Landings Harvested in 2003 –approximately 2,000 bushels = 1,000,000 clams**
- **Peconic Estuary Hard Clam Commercial Landings in Bushels in 2004 –approximately 15,000 bushels = 7,500,000 clams.**

There are consistently 2 to 8 clam dredge vessels that harvest surf clams and ocean quahogs from offshore fishing grounds and make a significant contribution to the total volume and value of the port's annual harvest. There are typically 2 longline vessels based at Shinnecock that fish for pelagic species like tuna and swordfish. There are 3 lobster boats, and 10 to 15 full time baymen, who harvest shellfish like clams, oysters or mussels.

Steve Tettelbach, Associate Professor Marine Sciences and Biology at the Southampton Campus of Long Island University, guesses that at its height there may have been about 600 commercial fishermen on the East End.

Brown Tide:

In 1982, the harvest of 500,000 lbs of bay scallops from the Peconic Estuary accounted for 28% of all U.S. commercial landings and had a dockside value of $1.8 million. After the appearance of the brown tide in 1985, the bay scallop population was virtually eliminated. Recent reports indicate that brown tide or a similarly destructive organism may be returning this summer to Southampton bays.

Dr. Christopher Gobler, a professor at Stony Brook University Marine Science center in Southampton and one of the nation's leading brown tide researchers said (Southampton East June 28, 2007 edition) that the bloom is the densest in Quantuck Bay, a nearly landlocked body of water midway between the inlets to Shinnecock and Moriches where the tidal flushing of the inlets has its most minimal effect. The brown tide organism's most destructive feature is that it chokes out other algae that shellfish will eat, and the shellfish, particularly bay scallops, die in shocking massive numbers.

Town Trustee Ed Warner, Jr. and longtime bayman said that in the last two years the Trustees, Cornell Cooperative Extension and The Nature Conservancy have released more than 100,000 scallops in the Tiana Bay and seeded new beds of eelgrass in hopes of jump-starting natural populations. A brown tide outbreak could wipe out all their efforts in a matter of weeks. The area is also one of the largest and most productive razor clam harvesting areas in the town, an important market that sustains many baymen through the lean times of winter. Razor clams, like bay scallops, are particularly susceptible to the starvation of brown tides and die off quickly. Mr. Warner said the loss of razor clam stocks in western Shinnecock and Tiana could be devastating for some fishermen.

Water Quality:

East Hampton Press, June 27, 2007 – Mosquito drains are serving as aqueducts that pour pollution into fragile tidal estuaries. Dr. Christopher Gobler and Florian Koch, doctoral candidate, unveiled findings of that waters in and around marshes sectioned by mosquito ditches have from very high levels of bacteria and nitrogen, degrading water quality and possibly killing important marine plant and animal species. They conducted their study in the fringe marshes of Flanders Bay in

Southampton, where poor water quality has been the norm for decades and in Accabonac Harbor in East Hampton, where local officials have begun damming the mosquito drains in hopes of curtailing their ill-effects and restoring the marshes to their original condition. Since the last outbreak of brown tide, pollution control measures – like runoff abatement projects and upgrades in sewage treatment – have reduced the amount of nitrate-laden pollutants that enter local waters and spark blooms of other algae, cutting off the bloom decay cycle that given brown tide it's most important sustenance. The Town of Southampton has a comprehensive stormwater runoff program.

- **Estuarine Waters are among the most productive of natural environments of Southampton, supporting the valuable commercial and sports fisheries associated with the coastal area. Waterfowl hunting, marinas, boatyards, repairs and supplies, processing operations and tourist related industries comprise some of the spinoff operations associated with the fisheries. Some species dependent on these waters at different periods of their lives are stripped bass, blue fish, weakfish, clams and scallops. The estuaries provide a multitude of habitats, circulating nutrients and fresh water that combine to create a highly productive environment. Estuarine waters are also critical for waterfowl wintering areas, recognized for being part of the Atlantic Flyway.**
- **Tidal Wetlands serve as the buffers between the coastal waters and the land. These areas provide a unique variety of habitats. The mix of freshwater into salt water forms an environment of varying salinities, a condition crucial to the development of certain tidal organisms such as crabs and shellfish.**
- **Freshwater Wetlands are described as the subset of wetlands that lie upstream of tidally influenced waters. Numerous types of wildlife require the water provided by ponds, swamps, bogs, stream courses and salt marshes of Southampton. Many waterfowl, including mallards, black ducks and wood ducks breed and feed in surface waters. Belted kingfishers, little green-backed and great blue herons, and northern water snakes hunt here, as do snapping turtles.**

STATEMENT BY
LISA P. JACKSON, COMMISSIONER
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
ON REAUTHORIZATION OF THE BEACHES ENVIRONMENTAL ASSESSMENT AND COASTAL HEALTH ACT
BEFORE THE U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON TRANSPORTATION AND INFRASTUCTURE
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
JULY 12, 2007

Good afternoon Chairwoman Johnson, Ranking Minority Member Baker and members of the committee. I thank you for the opportunity to appear before you today to discuss the need to maintain and strengthen a strong monitoring and assessment program of our ocean waters to protect the public who recreate in those waters at beaches all over the country.

Background of New Jersey's Ocean Water Quality Monitoring Program

The New Jersey shoreline and beaches are a national treasure. From an economic viewpoint alone, the Jersey Shore generates an estimated $36 billion in tourism-related revenues. Our shore and beaches are intrinsic components of the quality of life we enjoy in my state and throughout the region. Environmentally, the shore area is a vibrant ecosystem that is home to a diverse array of species.

I am sure that many of the members here can make similar statements about the beaches and coastal areas in their respective states. It is therefore important that the "Beaches Environmental Assessment and Coastal Health (BEACH) Act of 2000" be reauthorized and strengthened to continue to protect the water quality of these areas and the people who use them.

New Jersey has a long history of protecting its ocean bathers. In fact, our beach monitoring program, which began more than 30 years ago, was the model for the original BEACH Act. New Jersey's Cooperative Coastal Monitoring Program (CCMP) is a strong working partnership between the State and 10 county and local environmental health agencies. Local health agencies collect water samples routinely on Mondays and throughout the week as necessary. After performing analyses to determine enterococci concentrations at 188 ocean and 76 bay monitoring stations, the CCMP enables local health agencies to respond to immediate public health concerns arising from contamination in coastal recreational areas.

The majority of New Jersey's beachgoers have never seen a "Beach Closed" sign. However, if water quality standards are exceeded and a beach needs to be closed, local beach managers are notified and signs and red flags are immediately posted at the affected beach. "Beach Closed" notifications are posted on the NJDEP web site and 800 phone line almost immediately. Every state should have the resources necessary to develop the same type of notification system.

At the few beaches in New Jersey where repeated closures are sometimes necessary, sanitary surveys of beach areas are performed and concentrations of bacteria in nearshore waters are monitored. The local agencies then work closely with State agencies to investigate sources of water pollution. The protocols followed under the CCMP allow us to respond quickly to identify what may be the source of the immediate public health concern.

The State of New Jersey has adopted EPA recommended water quality criteria for bathing waters. Prior to 2004, the primary contact standard was 200 fecal coliforms per 100 mL of sample. Studies performed by EPA determined that enterococci bacteria have a greater correlation with swimming-associated gastrointestinal illness in both marine and fresh waters than other bacterial indicator organisms. In 2004, the New Jersey State Sanitary Code, promulgated by the New Jersey State Department of Health and Senior Services, was amended and the primary contact standard changed to 104 enterococci per 100 mL of sample for marine waters as required by the BEACH Act.

In addition to the bacterial water quality monitoring of bathing beaches, NJDEP also uses its plane or helicopter to fly the coast six days a week to identify other threats to bathing beach water quality, such as floatable debris, algae blooms and other problems that can be observed from the air. This surveillance enables the routine evaluation of coastal water quality and the assessment of the nature and extent of public reports of ocean pollution. I believe that New Jersey may be unique in this capability and we feel this is a critical component to protect our beaches and the public's health.

Sources of floatables that have affected the state's coastal shores include stormwater outfalls, combined sewer overflows, operational landfills, and illegal dumping. In 2007, NJDEP installed sensors on its aircraft to allow for remote sensing of the intensity and extent of algal blooms in the nearshore ocean waters. This gives the Department the ability to better identify blooms that may affect bathing beach quality.

Partial funding for the state program has come from the United States Environmental Protection Agency BEACH Act grants. BEACH grants were awarded to New Jersey in the years 2001 through 2007. Approximately 80 percent of BEACH grant funds are passed through to the county health departments for sampling and laboratory analysis.

BEACH Act Reauthorization

There are several key aspects of this proposed legislation sponsored by Congressman Pallone and Senator Lautenberg that make it important to New Jersey as well as the nation.

Enhanced funding – We strongly support the reauthorization of this Act, the increase in needed funding, and the full appropriation of the authorized amount. Increased Federal funding will greatly assist New Jersey, along with all of the coastal states and territories, to continue to maintain and improve beach monitoring, notification programs, and beach water quality.

Improvement in tracking pollution sources – The reauthorized BEACH Act also enhances tracking the sources of coastal water pollution. New Jersey believes that the best way to protect public health is to identify the pollution source(s) causing the beach closures and to address those sources. We have been limited in this regard because of the inability to use funds under the existing Beach Act for source tracking. NJDEP has successfully applied microbial source tracking techniques, such as coliphage, multiple antibiotic resistance testing and optical brighteners, at several locations around the State, including a limited number of recreational beaches.

We are very pleased to see that the proposed revisions to the Beach Act would provide states the resources to expand the use of microbial source tracking to improve beach water quality. Without full funding of these new revisions to the Beach Act source tracking activities will remain very limited, as well as the potential to improve coastal bathing beach water quality.

Development of rapid test methods – In order to further improve timeliness of notification, new test methods will be needed. New Jersey is pleased to see that the proposed revisions to the BEACH Act would strongly encourage USEPA to develop accurate, rapid test methods to determine coastal bathing beach water quality. These new methods, when sanctioned by EPA, should lead to same-day notification of poor water quality conditions at recreational bathing beaches.

NJDEP fully supports development of these new rapid methods. In fact, this summer, NJDEP continues its proactive approach to beach monitoring by working with USEPA to evaluate a rapid method for measuring enterococcus bacteria in marine waters. In addition, NJDEP is also planning to use 2008 BEACH Grant funds to purchase equipment to allow the Department to begin additional evaluation of the rapid test method for sampling recreational waters.

Timely public notification – While the proposed legislation requires notification within 24 hours of data availability, New Jersey currently provides the timeliest notification possible within the EPA accepted laboratory methodology. Results are posted on the Internet at www.njbeaches.org and on an 800 phone line in less than an hour of receipt of results from the local government or laboratory. The NJDEP received an EPA grant to create a centralized database that allows for the timely reporting of water quality conditions at New Jersey's beaches. For this we are grateful. However, the proposed legislation also calls for the establishment of a publicly accessible & searchable Global Information System database. The additional funding provided by this proposed legislation would be necessary for New Jersey to enhance its existing notification system.

Summary & Conclusion

Since 2000, less than one third of authorized Beach Act funds have actually been appropriated nationwide, severely limiting all States' abilities to fully implement effective beach monitoring and notification programs. New Jersey has been fortunate in that we already had an existing strong beach monitoring program. Beach grant funds greatly enhanced what we already had, however, further requirements from this proposed legislation cannot be implemented without full funding. Also, NJDEP strongly supports the reauthorization with full funding so that New Jersey, and all of the other coastal states and territories, can continue to maintain and improve beach monitoring and beach water quality.

I thank you again for the opportunity to appear before you today and am available to answer any questions you may have.

United States Government Accountability Office

GAO

Testimony

Before the Subcommittee on Water Resources and Environment, Committee on Transportation and Infrastructure, House of Representatives

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THE BEACH ACT OF 2000

EPA and States Have Made Progress Implementing the Act, but Further Actions Could Increase Public Health Protection

Statement of Anu K. Mittal, Director
Natural Resources and Environment

GAO-07-1073T

GAO
Accountability·Integrity·Reliability
Highlights

Highlights of GAO-07-1073T, a testimony before the Subcommittee on Water Resources and Environment, Committee on Transportation and Infrastructure, House of Representatives

Why GAO Did This Study

Waterborne pathogens can contaminate water and sand at beaches and threaten human health. Under the Beaches Environmental Assessment and Coastal Health (BEACH) Act, the Environmental Protection Agency (EPA) provides grants to states to develop water quality monitoring and public notification programs.

This statement summarizes the key findings of GAO's May 2007 report, *Great Lakes: EPA and States Have Made Progress in Implementing the BEACH Act, but Additional Actions Could Improve Public Health Protection.* In this report GAO assessed (1) the extent to which EPA has implemented the Act's provisions, (2) concerns about EPA's BEACH Act grant allocation formula, and (3) described the experiences of the Great Lakes states in developing and implementing beach monitoring and notification programs using their grant funds.

What GAO Recommends

In the May 2007 report, GAO recommended that EPA distribute grant funds to better reflect states' monitoring needs and help states improve the consistency of their monitoring and notification activities; and the Congress consider providing more flexibility to allow states to use some BEACH Act funds to investigate and mitigate contamination sources. GAO is not making any additional recommendations in this statement.

www.gao.gov/cgi-bin/getrpt?GAO-07-1073T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Anu Mittal at (202) 512-3841or mittala@gao.gov.

July 12, 2007

BEACH ACT OF 2000

EPA and States Have Made Progress Implementing the Act, but Further Actions Could Increase Public Health Protection

What GAO Found

EPA has taken steps to implement most BEACH Act provisions but has missed statutory deadlines for two critical requirements. While EPA has developed a national list of beaches and improved the uniformity of state water quality standards, it has not (1) completed the pathogen and human health studies required by 2003 or (2) published the new or revised water quality criteria for pathogens required by 2005. EPA stated that the required studies are ongoing, and although some studies were initiated in the summer of 2005, the work was interrupted by Hurricane Katrina. EPA subsequently initiated two additional water studies in the summer of 2007. According to EPA, completion of the studies and development of the new criteria may take an additional 4 to 5 years. Further, although EPA has distributed approximately $51 million in BEACH Act grants from 2001-2006, the formula EPA uses to make the grants does not accurately reflect the monitoring needs of the states. This occurs because the formula emphasizes the length of the beach season more than the other factors in the formula—beach miles and beach use. These other factors vary widely among the states, can greatly influence the amount of monitoring a state needs to undertake, and can increase the public health risk.

Thirty-four of the 35 eligible states have used BEACH Act grants to develop beach monitoring and public notification programs. Alaska is still in the process of developing its program. However, because state programs vary they may not provide consistent levels of public health protection nationwide. GAO found that the states' monitoring and notification programs varied considerably in the frequency with which beaches were monitored, the monitoring methods used, and how the public was notified of potential health risks. For example, some Great Lakes states monitor their high-priority beaches as little as one or two times per week, while others monitor their high-priority beaches daily. In addition, when local officials review similar water quality results, some may choose to only issue a health advisory while others may choose to close the beach. According to state and local officials, these inconsistencies are in part due to the lack of adequate funding for their beach monitoring and notification programs.

The frequency of water quality monitoring has increased nationwide since passage of the Act, helping states and localities to identify the scope of contamination. However, in most cases, the underlying causes of contamination remain unknown. Some localities report that they do not have the funds to investigate the source of the contamination or take actions to mitigate the problem, and EPA has concluded that BEACH Act grants generally may not be used for these purposes. For example, local officials at 67 percent of Great Lakes beaches reported that, when results of water quality testing indicated contamination at levels exceeding the applicable standards during the 2006 beach season, they did not know the source of the contamination, and only 14 percent reported that they had taken actions to address the sources of contamination.

Madam Chairwoman and Members of the Subcommittee:

We are pleased to be here today to participate in your hearing on the implementation of the Beaches Environmental Assessment and Coastal Health Act, known as the BEACH Act. Congress passed the BEACH Act in 2000, to improve states' beach monitoring programs and processes for notifying the public of potential health risks from beach contamination. As you know, waterborne pathogens such as bacteria, viruses, and parasites can contaminate the water and sand at beaches and threaten human health. Contact with or accidental ingestion of contaminated water can cause vomiting, diarrhea, and other illnesses, and may be life-threatening for susceptible populations such as children, the elderly, and those with impaired immune systems. State and local health officials may issue health advisories or close beaches when they believe levels of waterborne pathogens are high enough to threaten human health. Under the Clean Water Act, the Environmental Protection Agency (EPA) is responsible for publishing water quality criteria that establish thresholds at which contamination—including waterborne pathogens—may threaten human health.

Our testimony is based on GAO's recently issued report[1] on BEACH Act implementation in the eight Great Lakes states and will cover three issues (1) the extent to which EPA has implemented the provisions of the Act, (2) concerns about EPA's formula for allocating BEACH Act grants, and (3) states' experiences in developing and implementing beach monitoring and notification programs using BEACH Act grants. Although, our testimony and recent report addressed the Great Lakes states, published EPA data and information presented at EPA-sponsored BEACH Act conferences suggest that the findings are applicable nationwide. In summary, we found the following:

- EPA has implemented seven of the BEACH Act's nine requirements and provisions, but has missed statutory deadlines for two critical requirements. Among other things, EPA promulgated water quality standards for the 21 states and territories that had not adopted EPA's water quality criteria and developed a national list of beaches. However, EPA has not (1) completed the pathogen and human health studies that were required by 2003 or (2) published new or revised

[1] *Great Lakes: EPA and States Have Made Progress in Implementing the BEACH Act, but Additional Actions Could Improve Public Health Protection*, GAO-07-591 (Washington, D.C.: May 1, 2007).

water quality criteria for pathogens or pathogen indicators that were required by 2005. EPA told us that the required studies are ongoing and that the development of new pathogen indicators would follow completion of the studies, but completing these actions may take an additional 4 to 5 years. We recommended that EPA establish a definitive time line for completing the studies required by the BEACH Act and for publishing new or revised water quality criteria for pathogens and pathogen indicators. EPA concurred with this recommendation.

- Although EPA has distributed approximately $51 million in BEACH Act grants between 2001 and 2006 to the 35 eligible states and territories, EPA's formula for distributing BEACH Act grant funds does not reflect the states' varied monitoring needs. EPA's formula is based on three factors—length of beach season; beach miles, as measured by length of shoreline; and beach use, as measured by coastal population. If the program had received its full funding of $30 million annually that EPA used to develop the formula, each of the formula factors would have had a roughly equal impact on the grant allocations made to states. However, the program has received only about $10 million annually. Consequently, the beach season factor which EPA uses as a baseline for calculating states' grants has had a greater influence (about 82 percent) on the total BEACH Act grants each state received, while beach miles and beach use, which vary widely among the states and can impact the public health risk, have had a significantly smaller impact (about 9 percent each). As a result, states that have greater beach monitoring needs because of their longer coastlines and larger coastal populations, receive almost the same amount of funding as those states with smaller coastlines and coastal populations. We recommended that EPA reevaluate the funding formula it uses to distribute BEACH Act grants. While EPA concurred in the need to reevaluate the formula, it stated that some states were reluctant to make any significant changes to the formula.

- States' use of BEACH Act grant funds to develop and implement beach monitoring and public notification programs has generally increased the extent of beach monitoring. However, states vary considerably in the frequency with which they monitor beaches, the monitoring methods used, and the means by which they notify the public of associated health risks. These differences are due, in part, to the current BEACH Act funding levels, which some state officials said are inadequate for sufficient monitoring. Moreover, while increased frequency of monitoring has helped states and localities identify the scope of contamination, in most cases, the underlying causes of the

contamination remain unknown and unaddressed. Local officials from within the Great Lakes states told us that they generally do not have the funds to investigate and identify sources of contamination or to take actions to mitigate the problem, and EPA has concluded that states can not use BEACH grants for this purpose. To assist states and localities nationwide in identifying and addressing sources of beach contamination, we recommended that the Congress consider allowing states some flexibility to use their BEACH Act grants to undertake limited research to identify specific sources of contamination at monitored beaches and take certain actions to mitigate these problems. In addition, we recommended that EPA provide states and localities with specific guidance on monitoring frequency and public notification.

Background

Under the Clean Water Act, EPA is responsible for publishing water quality criteria that establish thresholds at which contamination—including waterborne pathogens—may threaten human health. States are required to develop standards, or legal limits, for these pathogens by either adopting EPA's recommended water quality criteria or other criteria that EPA determines are equally protective of human health. The states then use these pathogen standards to assess water quality at their recreational beaches. The BEACH Act amended the Clean Water Act to require the 35 eligible states and territories to update their recreational water quality standards using EPA's 1986 criteria for pathogen indicators. In addition, the BEACH Act required EPA to (1) complete studies on pathogens in coastal recreational waters and how they affect human health, including developing rapid methods of detecting pathogens by October 2003, and (2) publish new or revised water quality criteria by October 2005, to be reviewed and revised as necessary every 5 years thereafter.

The BEACH Act also authorized EPA to award grants to states, localities, and tribes to develop comprehensive beach monitoring and public notification programs for their recreational beaches. To be eligible for BEACH Act grants, states are required to (1) identify their recreational beaches, (2) prioritize their recreational beaches for monitoring based on their use by the public and the risk to human health, and (3) establish a public notification program. EPA grant criteria give states some flexibility on the frequency of monitoring, methods of monitoring, and processes for notifying the public when pathogen indicators exceed state standards, including whether to issue health advisories or close beaches. Although the BEACH Act authorized EPA to provide $30 million in grants annually

for fiscal years 2001 through 2005,[2] since fiscal year 2001, congressional conference reports accompanying EPA's appropriations acts have directed about $10 million annually for BEACH Act grants and EPA has followed this congressional direction when allocating funds to the program.

EPA Has Implemented Some But Not All of the BEACH Act Provisions

EPA has made progress implementing the BEACH Act's provisions but has missed statutory deadlines for two critical requirements. Of the nine actions required by the BEACH Act, EPA has taken action on the following seven:

Propose water quality standards and criteria—The BEACH Act required each state with coastal recreation waters to incorporate EPA's published criteria for pathogens or pathogen indicators, or criteria EPA considers equally protective of human health, into their state water quality standards by April 10, 2004. The BEACH Act also required EPA to propose regulations setting forth federal water quality standards for those states that did not meet the deadline. On November 16, 2004, EPA published in the *Federal Register* a final rule promulgating its 1986 water quality standards for *E. coli* and enterococci for the 21 states and territories that had not adopted water quality criteria that were as protective of human health as EPA's approved water quality criteria. According to EPA, all 35 states with coastal recreational waters are now using EPA's 1986 criteria, compared with the 11 states that were using these criteria in 2000.

Provide BEACH Act grants—The BEACH Act authorized EPA to distribute annual grants to states, territories, tribes and, in certain situations, local governments to develop and implement beach monitoring and notification programs. Since 2001, EPA has awarded approximately $51 million in development and implementation grants for beach monitoring and notification programs to all 35 states. Alaska is the only eligible state that has not yet received a BEACH Act implementation grant because it is still in the process of developing a monitoring and public notification program consistent with EPA's grant performance criteria. EPA expects to distribute approximately $10 million for the 2007 beach season subject to the availability of funds.

[2] Although the BEACH Act was originally authorized through 2005, Congress continued to fund EPA's efforts under the act in 2006 and 2007.

Publish beach monitoring guidance and performance criteria for grants—The BEACH Act required EPA to develop guidance and performance criteria for beach monitoring and assessment for states receiving BEACH Act grants by April 2002. After a year of consultations with coastal states and organizations, EPA responded to this requirement in 2002 by issuing its *National Beach Guidance and Required Performance Criteria for Grants*. To be eligible for BEACH Act grants, EPA requires recipients to develop (1) a list of beaches evaluated and ranked according to risk, (2) methods for monitoring water quality at their beaches, such as when and where to conduct sampling, and (3) plans for notifying the public of the risk from pathogen contamination at beaches, among other requirements.

Develop a list of coastal recreational waters—The BEACH Act required EPA to identify and maintain a publicly available list of coastal recreational waters adjacent to beaches or other publicly accessible areas, with information on whether or not each is subject to monitoring and public notification. In March 2004, EPA published its first comprehensive National List of Beaches based on information that the states had provided as a condition for receiving BEACH Act grants. The list identified 6,099 coastal recreational beaches, of which 3,472, or 57 percent, were being monitored. The BEACH Act also requires EPA to periodically update its initial list and publish revisions in the Federal Register. However, EPA has not yet published a revised list, in part because some states have not provided updated information.

Develop a water pollution database—The BEACH Act required EPA to establish, maintain, and make available to the public an electronic national water pollution database. In May 2005, EPA unveiled "eBeaches," a collection of data pulled from multiple databases on the location of beaches, water quality monitoring, and public notifications of beach closures and advisories. This information has been made available to the public through an online tool called BEACON (Beach Advisory and Closing Online Notification). EPA officials acknowledge that eBeaches has had some implementation problems, including periods of downtime when states were unable to submit their data, and states have had difficulty compiling the data and getting it into EPA's desired format. EPA is working to centralize its databases so that states can more easily submit information and expects the data reporting will become easier for states as they further develop their system.

Provide technical assistance on floatable materials—The BEACH Act required EPA to provide technical assistance to help states, tribes, and

localities develop their own assessment and monitoring procedures for floatable debris in coastal recreational waters. EPA responded by publishing guidance titled *Assessing and Monitoring Floatable Debris* in August 2002. The guidance provided examples of monitoring and assessment programs that have addressed the impact of floatable debris and examples of mitigation activities to address floatable debris.

Provide a report to Congress on status of BEACH Act implementation—The BEACH Act required EPA to report to Congress 4 years after enactment of the act and every 4 years thereafter on the status of implementation. EPA completed its first report for Congress, *Implementing the BEACH Act of 2000: Report to Congress* in October 2006, which was 2 years after the October 2004 deadline. EPA officials noted that they missed the deadline because they needed additional time to include updates on current research and states' BEACH Act implementation activities and to complete both internal and external reviews.

EPA has not yet completed the following two BEACH Act requirements:

Conduct epidemiological studies—The BEACH Act required EPA to publish new epidemiological studies concerning pathogens and the protection of human health for marine and freshwater by April 10, 2002, and to complete the studies by October 10, 2003. The studies were to: (1) assess potential human health risks resulting from exposure to pathogens in coastal waters; (2) identify appropriate and effective pathogen indicator(s) to improve the timely detection of pathogens in coastal waters; (3) identify appropriate, accurate, expeditious, and cost-effective methods for detecting the presence of pathogens; and (4) provide guidance for state application of the criteria. EPA initiated its multiyear *National Epidemiological and Environmental Assessment of Recreational Water Study* in 2001 in collaboration with the Centers for Disease Control and Prevention. The first component of this study was to develop faster pathogen indicator testing procedures. The second component was to further clarify the health risk of swimming in contaminated water, as measured by these faster pathogen indicator testing procedures. While EPA completed these studies for freshwater—showing a promising relationship between a faster pathogen indicator and possible adverse health effects from bacterial contamination—it has not completed the studies for marine water. EPA initiated marine studies in Biloxi, Mississippi, in the summer of 2005, 3 years past the statutory deadline for beginning this work, but the work was interrupted by

Hurricane Katrina. EPA initiated two additional marine water studies in the summer of 2007.

Publish new pathogen criteria—The BEACH Act required EPA to use the results of its epidemiological studies to identify new pathogen indicators with associated criteria, as well as new pathogen testing measures by October 2005. However, since EPA has not completed the studies on which these criteria were to be based, this task has been delayed.

In the absence of new criteria for pathogens and pathogen indicators, states continue to use EPA's 1986 criteria to monitor their beaches. An EPA official told us that EPA has not established a time line for completing these two remaining provisions of the BEACH Act but estimates it may take an additional 4-5 years. One EPA official told us that the initial time frames in the act may not have been realistic. EPA's failure to complete studies on the health effects of pathogens for marine waters and failure to publish revised water quality criteria for pathogens and pathogen indicators prompted the Natural Resources Defense Council to file suit against EPA on August 2, 2006, for failing to comply with the statutory obligations of the BEACH Act.

To ensure that EPA complies with the requirements laid out in the BEACH Act, we recommended that it establish a definitive time line for completing the studies on pathogens and their effects on human health, and for publishing new or revised water quality criteria for pathogens and pathogen indicators.

EPA's BEACH Act Grant Formula Does Not Adequately Reflect States' Monitoring Needs

While EPA distributed approximately $51 million in BEACH Act grants between 2001 and 2006 to the 35 eligible states and territories, its grant distribution formula does not adequately account for states' widely varied beach monitoring needs. When Congress passed the BEACH Act in 2000, it authorized $30 million in grants annually, but the act did not specify how EPA should distribute grants to eligible states. EPA determined that initially $2 million would be distributed equally to all eligible states to cover the base cost of developing water quality monitoring and notification programs. EPA then developed a distribution formula for future annual grants that reflected the BEACH Act's emphasis on beach use and risk to human health. EPA's funding formula includes the following three factors:

- *Length of beach season*—EPA selected beach season length as a factor because states with longer beach seasons would require more monitoring.

- *Beach use*—EPA selected beach use as a factor because more heavily used beaches would expose a larger number of people to pathogens, increasing the public health risk and thus requiring more monitoring. EPA used coastal population as a proxy for beach use because information on the number of beach visitors was not consistently available across all the states.

- *Beach miles*—EPA selected beach miles because states with longer shorelines would require more monitoring. EPA used shoreline miles, which may include industrial and other nonpublicly accessible areas, as a proxy for beach miles because verifiable data for beach miles was not available.

Once EPA determined which funding formula factors to use, EPA officials weighted the factors. EPA intended that the beach season factor would provide the base funding and would be augmented by the beach use and beach mile factors. EPA established a series of fixed amounts that correspond to states' varying lengths of beach seasons to cover the general expenses associated with a beach monitoring program. For example, EPA estimated that a beach season of 3 or fewer months would require approximately two full-time employees costing $150,000, while states with beach seasons greater than 6 months would require $300,000. Once the allotments for beach season length were distributed, EPA determined that 50 percent of the remaining funds would be distributed according to states' beach use, and the other 50 percent would be distributed according to states' beach miles, as shown in table 1.

Table 1: BEACH Act Grant Distribution Formula

Formula factor	Amount of grant
Beach season length	Less than 3 months: $150,000[a]
	3-4 months: $200,000
	5-6 months: $250,000
	Greater than 6 months: $300,000
Beach use	50% of funds remaining after allotment of beach season length funding.
Beach miles	50% of funds remaining after allotment of beach season length funding.

Source: EPA.

[a]States with less than a 3-month beach season only receive the $150,000 in beach season length funding.

EPA officials told us that, using the distribution formula above and assuming a $30 million authorization, the factors were to have received relatively equal weight in calculating states' grants and would have resulted in the following allocation: beach season—27 percent (about $8 million); beach use—37 percent (about $11 million); and beach miles—37 percent (about $11 million). However, because funding levels for BEACH Act grants have been about $10 million each year, once the approximately $8 million, of the total available for grants, was allotted for beach season length, this left only $2 million, instead of nearly $22 million, to be distributed equally between the beach use and beach miles factors. This resulted in the following allocation: beach season—82 percent (about $8 million); beach use—9 percent (about $1 million); and beach miles—9 percent (about $1 million).

Because beach use and beach miles vary widely among the states, but account for a much smaller portion of the distribution formula, BEACH Act grant amounts may vary little between states that have significantly different shorelines or coastal populations. For example, across the Great Lakes, there is significant variation in coastal populations and in miles of shoreline, but current BEACH Act grant allocations are relatively flat. As a result, Indiana, which has 45 miles of shoreline and a coastal population of 741,468, received about $205,800 in 2006, while Michigan, which has 3,224 miles of shoreline and a coastal population of 4,842,023, received about $278,450 in 2006. Similarly, the current formula gives localities that have a longer beach season and significantly smaller coastal populations an advantage over localities that have a shorter beach season but significantly greater population. For example, Guam and American Samoa with 12 month beach seasons and coastal populations of less than 200,000 each receive larger grants than Maryland and Virginia, with 4 month beach seasons and coastal populations of 3.6 and 4.4 million, respectively.

If EPA reweighted the factors so that they were still roughly equal given the $10 million allocation, we believe that BEACH Act grants to the states would better reflect their needs. Consequently, we recommended that if current funding levels remain the same, that the agency should revise the formula for distributing BEACH Act grants to better reflect the states' varied monitoring needs by reevaluating the formula factors to determine if the weight of the beach season factor should be reduced and if the weight of the other factors, such as beach use and beach miles should be increased.

Experiences of the Great Lakes and Other Eligible States in Implementing BEACH Act Grants

States' use of BEACH Act grants to develop and implement beach monitoring and public notification programs has increased the number of beaches being monitored and the frequency of monitoring. However, states vary considerably in the frequency in which they monitor beaches, the monitoring methods used, and the means by which they notify the public of health risks. Specifically, 34 of the 35 eligible states have used BEACH Act grants to develop beach monitoring and public notification programs; and the remaining state, Alaska, is in the process of setting up its program. However, these programs have been implemented somewhat inconsistently by the states which could lead to inconsistent levels of public health protection at beaches in the United States. In addition, while the Great Lakes and other eligible states have been able to increase their understanding of the scope of contamination as a result of BEACH Act grants, the underlying causes of this contamination usually remain unresolved, primarily due to a lack of funding. For example, EPA reports that nationwide when beaches are found to have high levels of contamination, the most frequent source of contamination listed as the cause is "unknown".

BEACH Act officials from six of the eight Great Lakes states that we reviewed—Illinois, Michigan, Minnesota, New York, Ohio, and Wisconsin—reported that the number of beaches being monitored in their state has increased since the passage of the BEACH Act in 2000. For example, in Minnesota, state officials reported that only one beach was being monitored prior to the BEACH Act, and there are now 39 beaches being monitored in three counties. In addition, EPA data show that, in 1999, the number of beaches identified in the Great Lakes was about 330, with about 250 being monitored. In 2005, the most recent year for which data are available, the Great Lakes states identified almost 900 beaches of which about 550 were being monitored.

In addition to an increase in the number of beaches being monitored, the frequency of monitoring at many of the beaches in the Great Lakes has increased. We estimated that 45 percent of Great Lakes beaches increased the frequency of their monitoring since the passage of the BEACH Act. For example, Indiana officials told us that prior to the BEACH Act, monitoring was done a few times per week at their beaches but now monitoring is done 5-7 days per week. Similarly, local officials in one Ohio county reported that they used to test some beaches along Lake Erie twice a month prior to the BEACH Act but now they test these beaches once a week. States outside of the Great Lakes region have reported similar benefits of receiving BEACH Act grants. For example, state officials from

Connecticut, Florida, and Washington reported increases in the number of beaches they are now able to monitor or the frequency of the monitoring they are now able to conduct.

Because of the information available from BEACH Act monitoring activities, state and local beach officials are now better able to determine which of their beaches are more likely to be contaminated, which are relatively clean, and which may require additional monitoring resources to help them better understand the levels of contamination that may be present. For example, state BEACH Act officials reported that they now know which beaches are regularly contaminated or are being regularly tested for elevated levels of contamination. We determined that officials at 54 percent of Great Lakes beaches we surveyed believe that their ability to make advisory and closure decisions has increased or greatly increased since they initiated BEACH Act water quality monitoring programs.

However, because EPA's grant criteria and the BEACH Act give states and localities some flexibility in implementing their programs we also identified significant variability among the Great Lakes states beach monitoring and notification programs. We believe that this variability is most likely also occurring in other states as well because of the lack of specificity in EPA's guidance. Specifically, we identified the following differences in how the Great Lake states have implemented their programs.

Frequency of monitoring. Some Great Lakes states are monitoring their high-priority beaches almost daily, while other states monitor their high-priority beaches as little as one to two times per week. The variation in monitoring frequency in the Great Lakes states is due in part to the availability of funding. For example, state officials in Michigan and Wisconsin reported insufficient funding for monitoring.

Methods of sampling. Most of the Great Lakes states and localities use similar sampling methods to monitor water quality at local beaches. For example, officials at 79 percent of the beaches we surveyed reported that they collected water samples during the morning, and 78 percent reported that they always collected water samples from the same location. Collecting data at the same time of day and from the same site ensures more consistent water quality data. However, we found significant variations in the depth at which local officials in the Great Lakes states were taking water samples. According to EPA, depth is a key determinant of microbial indicator levels. EPA's guidance recommends that beach officials sample at the same depth—knee depth, or approximately 3-feet

deep—for all beaches to ensure consistency and comparability among samples. Great Lakes states varied considerably in the depths at which they sampled water, with some sampling occurring at 1-6 inches and other sampling at 37-48 inches.

Public notification. Local officials in the Great Lakes differ in the information they use to decide whether to issue health advisories or close beaches when water contamination exceeds EPA criteria and in how to notify the public of their decision. These differences reflect states' varied standards for triggering an advisory, closure, or both. Also, we found that states' and localities' means of notifying the public of health advisories or beach closures vary across the Great Lakes. Some states post water quality monitoring results on signs at beaches; some provide results on the Internet or on telephone hotlines; and some distribute the information to local media.

To address this variability in how the states are implementing their BEACH Act grant funded monitoring and notification programs, we recommended that EPA provide states and localities with specific guidance on monitoring frequency and methods and public notification.

Further, even though BEACH Act funds have increased the level of monitoring being undertaken by the states, the specific sources of contamination at most beaches are not known. For example, we determined that local officials at 67 percent of Great Lakes' beaches did not know the sources of bacterial contamination causing water quality standards to be exceeded during the 2006 beach season and EPA officials confirmed that the primary source of contamination at beaches nationwide is reported by state officials as "unknown." For example, because state and local officials in the Great Lakes states do not have enough information on the specific sources of contamination and generally lack funds for remediation, most of the sources of contamination at beaches have not been addressed. Local officials from these states indicated that they had taken actions to address the sources of contamination at an estimated 14 percent of the monitored beaches.

EPA has concluded that BEACH Act grant funds generally may be used only for monitoring and notification purposes. While none of the eight Great Lakes state officials suggested that the BEACH Act was intended to help remediate the sources of contamination, several state officials believe that it may be more beneficial to use BEACH Act grants to identify and remediate sources of contamination rather than just continue to monitor water quality at beaches and notify the public when contamination occurs.

Local officials also reported a need for funding to identify and address sources of contamination. Furthermore, at EPA's National Beaches Conference in October 2006, a panel of federal and academic researchers recommended that EPA provide the states with more freedom on how they spend their BEACH Act funding.

To address this issue, we recommended that as the Congress considers reauthorization of the BEACH Act, that it should consider providing EPA some flexibility in awarding BEACH Act grants to allow states to undertake limited research to identify specific sources of contamination at monitored beaches and certain actions to mitigate these problems, as specified by EPA.

In conclusion, Madam Chairwoman, EPA has made progress in implementing many of the BEACH Act's requirements but it may still be several years before EPA completes the pathogen studies and develops the new water quality criteria required by the act. Until these actions are completed, states will have to continue to use existing outdated methods. In addition, the formula EPA developed to distribute BEACH Act grants to the states was based on the assumption that the program would receive its fully authorized allocation of $30 million. Because the program has not received full funding and EPA has not adjusted the formula to reflect reduced funding levels, the current distribution of grants fails to adequately take into account the varied monitoring needs of the states. Finally, as evidenced by the experience of the Great Lakes states, the BEACH Act has helped states increase their level of monitoring and their knowledge about the scope of contamination at area beaches. However, the variability in how the states are conducting their monitoring, how they are notifying the public, and their lack of funding to address the source of contamination continues to raise concerns about the adequacy of protection that is being provided to beachgoers. This concludes our prepared statement, we would be happy to respond to any questions you may have.

GAO Contacts

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NRDC
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NATURAL RESOURCES DEFENSE COUNCIL

TESTIMONY OF

MS. NANCY STONER
DIRECTOR, CLEAN WATER PROJECT
NATURAL RESOURCES DEFENSE COUNCIL

BEFORE THE HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE'S WATER RESOURCES AND THE ENVIRONMENT SUBCOMMITTEE

JULY 12, 2007

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Testimony of Nancy Stoner, Director, Clean Water Project
Natural Resources Defense Council
Before the U.S. House of Representatives Subcommittee on Water Resources and Environment

Good morning, Mr. Chairman, and members of the Committee. I am Nancy Stoner, Director of the Clean Water Project at the Natural Resources Defense Council (NRDC), a national environmental group that has a long history of working to protect our nation's waters through the Clean Water Act. NRDC was involved in supporting the BEACH Act in 2000 and appreciates your interest in promoting even more advances in beachwater protection.

Thank you for holding this timely hearing today on reauthorizing the Beaches Environmental Assessment and Coastal Health (BEACH) Act of 2000, to improve beach water quality monitoring programs and processes of notifying the public of health risks from contamination at beaches. This is a tremendous opportunity for the Congress to provide increased funding and essential improvements in these programs.

Our beaches are one of our nation's national treasures, with more than half of all Americans visiting coastal areas each year. Waterborne pathogens contaminate water and sand and pose a threat to the health of beachgoers. Recognizing the need for consistent protection at recreational beaches, Congress passed the BEACH Act, directing the EPA to develop public health based criteria for using in assessing beach water quality and to provide grants to states and local governments to develop water quality monitoring and public notification programs. Since then, progress has been made in improving public health at our nation's beaches. Every coastal state now has a beach water monitoring and public notification program.

Despite this progress, we are still not doing everything possible to protect the public. Pollutants continue to foul our waters, threatening human and ecological health. The more monitoring that is done, the more unhealthy beaches we find. As of 2006, there were more than 20,000 beach closing or advisory days in the U.S. For more than half of the advisories and closings issued, the source of pollution was unknown and underlying causes remain unaddressed.

Our beaches are being contaminated by pathogens derived from fecal mater, including bacteria, viruses and parasites, that enter primarily through storm waters and sewage discharges. Anyone swimming in contaminated water risks being infected by pathogens that can enter through the mouth, nose, eyes, lungs or open wounds. These pathogens cause a wide range of diseases including ear, nose and eye infections; gastroenteritis; hepatitis; encephalitis; skin rashes; and respiratory illnesses. While these illnesses usually pass after several days or weeks, in some cases they can cause serious long-term effects or even death. Certain groups, including children, the elderly, and those with a weakened immune system are particularly vulnerable to these long-term effects.

Experts estimate that as many as 7 million Americans get sick each year from drinking or swimming in water contaminated with bacteria, viruses or parasites.

The EPA was required by Congress under the BEACH Act to conduct the necessary studies to assess the full human health risk from exposure to pathogens in coastal recreation waters by October 2003 and subsequently publish revised water quality criteria for pathogens and pathogen indicators based on those studies by October 2005. Unfortunately, EPA is far behind schedule in doing this essential work and has stated it will not have updated standards in place before 2011. NRDC has sued the EPA to force compliance with the congressionally mandated requirements. NRDC wants the EPA to complete research on illnesses associated with swimming in contaminated water; expand the scope of the studies so all types of pollution sources, all types of pathogens, and the full range of waterborne diseases are examined; set standards that will protect all swimmers; and set testing methods that will allow beaches to make timely decisions about whether to close or issue an advisory.

A scientific panel assembled by EPA this spring evaluated the current water quality criteria and corroborated many of the concerns that NRDC has raised over the years. For example, the panel's report points out the need for new criteria that are protective of the most sensitive subpopulations including children, the elderly and pregnant women. The experts' report mentions the need for effective predictive models for beachwater quality forecasting. The report also notes that criteria need to be based on a suite of illnesses, not only on gastroenteritis.[i] The GAO also released a report this spring evaluating the BEACH Act. The GAO report identified the need for rapid analytical methods to better protect human health, the need for increased funding for federal BEACH Act grants to states, and the need for those funds to be available for pollution source investigation and remediation.[ii]

I will discuss NRDC's recommendations for a comprehensive, national beach protection program that would provide a strong foundation for coastal water quality monitoring and public health protection at our beaches. The EPA's BEACH program and the federal BEACH Act have adopted several elements of NRDC's proposed program, but further progress is needed. We support the 2007 Beach Protection Act, H.R. 2537, which would better protect Americans by strengthening the BEACH act and its provisions to strengthen the BEACH Act.

Update Beach Protection Standards and Contamination Detection Methods and Improve Monitoring and Advisory Requirements

Today's beachwater quality standards, which were set in 1986, are deficient and may leave beachgoers vulnerable to a range of illnesses. The current standards focus on bacteria found in human waste, and may not protect the public from diseases caused by viruses and parasites, such as Cryptosporidium and Giardia, which are also a cause of waterborne illnesses in the United States. Current standards focus on gastroenteritis, and therefore may not protect beachgoers from rashes, ear aches, pink eye or respiratory infections, or from serious illnesses such as hepatitis and encephalitis. The standards were designed to detect sewage pollution and may not be adequately protective against the

various waterborne diseases carried by animal wastes. The standards are insufficient to protect those most likely to die from infectious disease- the elderly, children, and individuals with impaired immune systems. They are not designed to protect in all types of water bodies, including tropical and semi-tropical waters. Finally, current standards are not designed to protect surfers, lifeguards and others with repeated and prolonged exposure to beachwater pollution. The EPA needs to speed up and complete the required epidemiology studies and speed up the time table for proposing new standards. New standards need to be more protective than the EPA's current recommended bacteria standard.

Rapid methods for detecting beachwater contamination need to be approved and mandated. Current methods require a long incubation period, producing results in 24 to 48 hours. This lag time between when pathogen contaminated waters are sampled and when the public is notified creates a dangerous window where swimmers can be infected. We need to direct the EPA to approve rapid testing methods that give results in 2 hours or less so closure or advisory decisions can be made the same day samples are taken. If passed, the 2007 Beach Protection Act would require rapid testing and notification to ensure that beachgoers know whether the water they swim in is safe.

Beachgoers need to know whether the water at the beach is safe, and they need to receive prompt and complete information. There is inconsistency among state beachwater monitoring and public notification programs, and some state programs may be not be adequate for protecting the public. The EPA needs to update its monitoring and public notification guidance to ensure that state programs are sufficiently protective and require states to follow it as a criterion of grant funding. The public should be notified immediately when monitoring reveals that public health standards have been violated. Yet states vary as to whether they issue an advisory, a closure or both. Some states wait until there have been two consecutive standard violations before an advisory is issued. Monitoring frequency also varies among states, with some states monitoring their high priority beaches almost daily and others only once or twice a week.

More intensive monitoring may be needed in areas of chronic pollution and after rain events. Beach advisories should be posted the first time levels exceed the EPA's public health standards, and the closing or advisory should continue until further testing demonstrates that the beachwater is safe. Notification should be easy for the public to receive and include toll-free phone lines, signs posted at beaches, electronic notifications, newspaper notices, and television and radio coverage in conjunction with the weather report.

To further protect public health, preemptive rainfall advisories, in anticipation of elevated bacterial levels, should be issued where a correlation between rainfall and water quality exists or when sewer overflows or catastrophic events jeopardize beachwater safety. Computer modeling systems, which take into account current weather and environmental conditions, should be used to predict bacteria levels and issue advisories in real time.[iii]

Prevent Beachwater Pollution: Provide Assistance for Source Tracking and Remediation

Beachwater contamination threatens coastal economies, where economic activities related to the oceans contribute more than $117 billion a year to U.S. prosperity and support more than two million jobs.[iv] In addition to reducing peoples' exposure to beachwater pollution through better monitoring and public notification, beachwater pollution need to be controlled at the source. As the data show, most beach closures and advisories are due to elevated bacteria levels. However, in most cases the source of bacterial contamination causing beach closures/advisories is not known.

To help prevent future contamination, sanitary surveys should be conducted to identify the source of beachwater pollution when water quality standards designed to protect swimming use are exceeded. State beachwater programs funded under the federal BEACH Act should be required to obtain and report information on potential contamination sources to the EPA, and the EPA should make that information publicly available in searchable databases. Most important, that information should be used to reduce the sources of beachwater pollution.

We support the Beach Protection Act provisions that would increase the amount of BEACH Act funding grants given to states and local governments and allow these grants to be used not only for monitoring and notification programs, but also for pollution source tracking and remediation.

Implement and Enforce Better Controls on Pollution Sources

Preventing beachwater contamination is the best tool for protecting humans and aquatic life. As an aggressive prevention strategy we need stricter controls on stormwater and combined sanitary and sewer overflows. Federal stormwater-permitting requirements for municipal systems, industrial stormwater dischargers, and construction sites are now in place, but these programs need to be implemented and enforced so that discharges do not contribute to beachwater contamination. The EPA needs to require programs to use up-to-date technologies to reduce contaminated stormwater discharges and put additional controls in place where basic technologies are not sufficient to make beachwater safe.

We need to be using effective storm water management approaches, including low impact development (LID). Our goals are not being met by conventional stormwater management, and communities often struggle with the economic burden of repairing or expanding existing stormwater infrastructure. LID offers an approach that is both more economically sustainable and more environmentally sound.[v]

Although the EPA's combined sewer overflow policy has been in place since 1994, as of 2004 only 35 percent of the 828 communities nationwide with combined stormwater and sewage systems had begun implementation of a long-term plan to control combined sewer overflows.[vi] Sanitary sewer overflows are illegal, yet the EPA has

estimated that there are more than 23,000 sanitary sewer overflows every year into rivers, lakes, wetlands, and coastal waters.[vii] A consensus proposal for controlling SSOs was shelved by the White House in January 2001 and has never been finalized. Implementation and enforcement of these programs need to be substantially increased.

Improve Coordination Between Sanitation and Public Health Officials

Improved monitoring, immediate reporting of overflows to public health authorities and to the general public, and prompt response to overflows to minimize human exposure and environmental harm are critical steps that need to be taken to close the communication gaps between those responsible for sewage and stormwater treatment and those charged with protecting public health. The public has the right to know when there is a sewer overflow or stormwater discharge that threatens beachwater quality, and they should be informed when it happens, not days later when the beachwater monitoring results finally arrive. In response to the need for public notification, The Raw Sewage Overflow Community Right-to-Know Act, H.R. 2452 was introduced in May 2007. If passed, this act will amend the Federal Water Pollution Control Act to direct owners or operators of publicly owned treatment works to: 1) institute an alert system for sewer overflows; 2) notify the public of such overflows in areas where human health is potentially affected within 24 hours; 3) immediately notify public health authorities, such as beachwater manages, and other affected entities; and 4) provide specified reports to the Administrator of the EPA or the State.[viii] NRDC supports H.R. 2452, which would ensure that beachwater monitors and the public know about sewage spills that could endanger public health. We also support the Beach Protection Act provision to require public health officials to inform environmental agencies when beachwater monitoring detects contamination so that it can be promptly addressed.

Close the Funding Gap

The EPA estimates that there will be a funding gap between the costs of sewage and stormwater controls and available resources of between $72 billion and $229 billion over the next 20 years, depending on the growth of the economy.[ix] This funding gap will only grow over time as we continue to defer operations and maintenance and allow our sewer and stormwater systems to deteriorate. Congress needs to assist state and local communities in bridging the funding gap by substantially increasing the federal resources available to meet clean water needs through the creation of a Clean Water Trust Fund or other dedicated source of clean water funding. Communities also need to spend smarter by preserving and enhancing the use of soil and vegetation to reduce beachwater pollution.[x] In watersheds with at least 13.5 percent wetland coverage, periods of rainfall do not substantially increase fecal coliform bacteria counts.[xi] The Water Quality Financing Act, H.R. 720, which is currently pending in the Senate, would authorize $14 billion for the Clean Water State Revolving Fund over the next four years and provide critical assistance for projects that repair and rebuild failing storm water and wastewater infrastructure, including through the use of LID. We feel that this funding increase is crucial.

Finally, the 2007 Beach Protection Act has proposed a doubling of the Federal grants made available to states under the BEACH Act, from $30 million to $60 million. We support this and feel that funding should not only be increased but it needs to be fully appropriated. Currently, only about $10 million has been appropriated annually for BEACH Act grants, leaving state and local governments without the full support they need to tackle beachwater contamination and protect the public and the environment.

In closing, I would like to thank Chairwoman Johnson for providing me with the opportunity to testify today. I would also like to thank Representative Pallone and Representative Bishop and all other cosponsors for their leadership in making public safety and environmental health at our beaches a priority by initiating much needed improvements in the BEACH Act. I would be happy to answer any questions you may have.

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[i] EPA, *Report of the Experts Scientific Workshop on Critical Research Needs for the Development of New or Revised Recreational Water Quality Criteria*, March 2007, available at: http://www.epa.gov/waterscience/criteria/recreation/

[ii] GAO, Report to Congressional Requesters, *Great Lakes: EPA and States Have Made Progress in Implementing the BEACH Act, but Additional Actions Could Improve Public Health Protection*, available at: http://www.gao.gov/new.items/d07591.pdf

[iii] USGS Ohio Water Science Center, "Nowcasting Beach Advisories," June 28, 2006, available at: http://www.ohionowcast.info/index.asp

[iv] U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21st Century Final Report of the U.S. Commission on Ocean Policy*, Washington, D.C., September 20, 2004, p. 31, available at: http://www.oceancommission.gov.

[v] Low impact development Center, Inc, available at: http://www.lowimpactdevelopment.org/

[vi] EPA, *Report to Congress on Implementation and Enforcement of the Combined Sewer Overflow Control Policy*, p. 7-3, August 2004.

[vii] EPA, *2004 Report to Congress*, p. ES-5.

[viii] 33 U.S.C. 1342, sec. 402(r).

[ix] EPA, *2004 Report to Congress*, p. 9-10.

[x] Christopher Kloss and Crystal Calarusse, *Rooftops to Rivers: Green Strategies for Controlling Stormwater and Combined Sewer Overflows*, NRDC, June 2006.

[xi] Michael A. Mallin, "Wading in Waste," in *Scientific American*, June 2006, pp. 53–59.

823-R-07-007

REPORT OF THE EXPERTS SCIENTIFIC WORKSHOP ON CRITICAL RESEARCH NEEDS FOR THE DEVELOPMENT OF NEW OR REVISED RECREATIONAL WATER QUALITY CRITERIA

DRAFT
EXECUTIVE SUMMARY
BY WORKGROUP CHAIRS

Airlie Center
Warrenton, Virginia
March 26-30, 2007

U.S. Environmental Protection Agency
Office of Water
Office of Research and Development

July 13, 2007

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EXECUTIVE SUMMARY

The *Experts Scientific Workshop on Critical Research and Science Needs for the Development of New or Revised Recreational Water Quality Criteria* took place at the Airlie Center in Warrenton, Virginia, from March 26 to March 30, 2007. Forty-three U.S. and international experts from academia, numerous states, public interest groups, U.S. Environmental Protection Agency (EPA or the Agency), and other federal agencies, met to discuss the state of the science on recreational water quality research and implementation issues.

The purpose of the workshop was for EPA to obtain input from individual members of the broad scientific and technical community on the "critical path" research and related science needs for developing scientifically defensible new or revised Clean Water Act (CWA) Section 304(a) recreational ambient water quality criteria (AWQC) in the near-term. Near-term needs were defined as those specific research and science activities that could be accomplished over the next 2 to 3 years so that results would be available to EPA in time to support development of new or revised criteria. EPA would publish the new or revised criteria in roughly 5 years (2012).

Experts were assigned to one of seven workgroups to discuss the following seven topics essential for EPA's development of new or revised criteria: (1) approaches to criteria development; (2) pathogens, pathogen indicators, and indicators of fecal contamination; (3) methods development, (4) comparing risks (to humans) from different sources; (5) "acceptable risk"; (6) modeling applications for criteria development and implementation; and (7) implementation realities. The workshop proceedings dedicate a chapter to each of these seven topics.

Drafts of the seven chapters of the report were written by the experts at the workshop. Subsequently, the chairs of the respective groups worked with EPA to finalize each chapter and prepare this Executive Summary. Because the workshop's purpose was to obtain individual input from each expert, the report is necessarily a summary of individual views. Thus, commonalities and differences in expert opinion are acknowledged throughout the workshop proceeding. During their deliberations, experts were asked to consider the following four main applications and implementation issues associated with AWQC for recreational waters: (1) listing of impaired waters under CWA §303(d); (2) total maximum daily load (TMDL) calculations for impaired waters; (3) National Pollutant Discharge Elimination System (NPDES) permits; and (4) recreational water monitoring and notification.

Because of the diverse nature of watersheds throughout the United States, there was general agreement among experts that criteria that have flexibility are desirable. A common statement from a number of workshop participants was that a "one size fits all" criterion is inadequate for public health protection and the compliance applications under the CWA. Workshop participants agreed that EPA should develop implementation guidance, including monitoring protocols, concurrently with development of new or revised §304(a) AWQC, and that the criteria and implementation guidance should be released simultaneously. This would facilitate acceptance and adoption by States, Tribes, and Territories.

Various workshop participants suggested areas for EPA to improve lines of communication, including with state and local governments and the public, by means of clear implementation

guidance and timely risk communication and education activities. Experts also urged EPA to communicate with other researchers who are planning to conduct relevant studies in the near term; importantly, researchers who plan to conduct epidemiological studies of swimmers and adverse health outcomes during the summers of 2007 and 2008 to determine if any of the methods being used are appropriate for inclusion in EPA's planned summer 2007 studies. Whether a particular method or tool (e.g., indicator type, quantification assay, use of watershed and/or predictive models) is appropriate for addition to EPA's planned epidemiological studies could be judged based on whether that indicator or method is important for one or more of the four high priority research paths discussed below.

Summary of Critical Path Research

The workshop participants identified the following critical path research areas as high priority: (1) human health impacts from different sources of fecal contamination; (2) measurement issues: climatic, geographic, and temporal variability; (3) determining risk level and subpopulations of concern; and (4) indicators and methods for measuring fecal contamination.

Human Health Impacts from Different Sources of Fecal Contamination

There was broad support among the workshop participants for conducting research and including in the new or revised criteria provisions that account for differences in risks associated with human versus nonhuman sources of fecal contamination, and point versus non-point sources—regardless of the framework ultimately proposed for the criteria. The absolute risk levels and the magnitude of differences between animal and human waste associated risks are not well characterized and may vary greatly geographically and temporally. Point sources and non-point sources of fecal contamination also differ in risk and those differences are not well characterized. Workshop participants suggested enhancements to epidemiological studies, quantitative microbial risk assessment (QMRA), development of quantitative sanitary investigations, and models to aid in sanitary investigations to help characterize risks.

Epidemiological studies are the preferred approach to define and quantify human health risks from exposure to pathogens in recreational waters. Two principal study designs have been used in previous studies of recreational waters—randomized control trials and prospective observational cohort studies. Epidemiological studies have historically been used to assess human health risks at beaches impacted by point sources of fecal contamination. However, the need for additional epidemiological studies, especially at non-point source impacted beaches, is viewed as essential to better define risk and guide future criteria development. In future epidemiological studies, consideration should be given to enhanced study designs as well as use of both study designs simultaneously.

QMRA can be used to rank the relative risks of different exposure scenarios, such as recreational sites impacted by animal versus human fecal wastes, where no direct epidemiological information is available. QMRA can also supplement existing epidemiological data, such as has been done in a number of specific case studies in the United States and in other countries. QMRA has the ability to consider infectivity of specific pathogens from a variety of fecal sources and their fate and transport in waterbodies to estimate risk.

Quantitative sanitary investigations for watershed characterization could be used to classify water quality based on relative risk, with waters that are more likely to be impacted by human waste being assigned a higher risk. Some methods for watershed characterization include the following: methods for sanitary investigations, methods for fecal source identification, and modeling to determine which watershed characteristics are related to risk of illness. Quantitative sanitary investigations can address multiple concerns regarding the applicability of criteria, including the impact of different sources of fecal contamination. The details of how quantitative sanitary investigations can be designed and implemented on a national level have yet to be determined and were not substantively addressed by the workshop participants; in part because the process by which the details would be determined is likely to be lengthy and iterative, though the details will be important for implementation.

Related Key Near-term Science and Research Needs:
[bracketed numbers correspond to the report chapters in EPA 823-R-07-006]:

- Develop methods to quantify the difference in risk to human health from human versus animal fecal material in recreational waters. [1, 4, 7]
  - Conduct epidemiological studies at locations influenced by different types of animals but that are not influenced by treated sewage (wastewater) effluent or other human fecal sources. [2]
  - Identify data gaps and collect data that are important for conducting QMRA studies for estimating health risks from different sources of fecal contamination (e.g., humans, domesticated animals, birds, point, non-point), particularly when epidemiological data are not available. [4]
  - Conduct QMRA studies to estimate the risk of low probability/high impact illnesses from human exposure to animal waste in recreational waters. (Animals can harbor many bacterial and protozoan pathogens that pose a human health hazard and some of these pathogens, such as enterohemorrhagic *E. coli*, can cause serious, life-threatening illness in humans.) [4, 5]
- Determine potential exposure levels and the associated health risks to intermittent microbial pollution discharges, combined sewer overflows (CSOs), urban runoff, and concentrated animal feeding operations (CAFOs). One aspect of exposure includes whether swimmers are likely to be in the water during these events, and if so, collect appropriate data (e.g., for complementary QMRA studies). [7]
- Develop protocols for using simple, heuristic, statistical models that correlate watershed activities (presence of sewage treatment plant effluents, agricultural activities, domesticated animals) and attributes (slope, soil type, climate, soil moisture) to the susceptibility of a waterbody to exceed new or revised criteria levels. [6]
- Develop quantitative rather than qualitative sanitary investigation tools. A tiered assessment of the watershed, starting with traditional fecal indicators (conservative measures) and progressing to select a suite of indicators that provide source specificity and load information, was suggested as one possible approach. [1, 2, 7]

- Develop indicators and associated methods for differentiating between human and animal fecal contamination. These methods could be part of a second or third tier of steps in evaluating a watershed, regardless of what criteria approach is selected. [2, 3]

Measurement Issues: Climatic, Geographic, and Temporal Variability

There was broad support among the workshop participants for conducting research and including in the new or revised criteria provisions that account for differences in climatic regions and geographic areas. Workshop participants were in agreement that the current state of the science calls for the new or revised criteria to be based on indicators of fecal contamination. Experts also agreed that enterococci and *E. coli* are probably not appropriate indicators in all climatic regions (e.g., in tropical and subtropical climates) and geographic areas. Appropriate indicators that correlate with recreator illness rates in tropical and subtropical climates are needed. New or revised criteria need to be applicable in areas where currently accepted indicators of fecal contamination, such as enterococci, may not be strongly correlated with observed excess illness rates. The workshop participants felt that there is no scientific rationale to support different risk level targets between geographic areas (i.e., freshwater and marine water) or between climatic regions (tropical, subtropical, temperate).

Workshop participants agreed that the spatial and temporal variability evident in indicator data sets, as well as the delay in obtaining monitoring results using conventional culture-based methods, rendered the single sample standard impractical for routine water quality notification purposes. Simple statistical models that do not necessarily require an understanding of processes and mechanisms have the potential to be incorporated into the new criteria, particularly for beach monitoring and water quality notification purposes. These models relate water quality to environmental factors like wind speed, prior rainfall, and tide level. Models have been demonstrated to serve as valuable tools for making closure or advisory decisions while managers wait for laboratory results, thereby providing for improved public health protection for swimmers as compared to relying on bacterial indicator monitoring alone. Also, once a model is site-validated with a sufficient baseline of monitoring, further monitoring could be reduced and targeted to instances where the model predicts exceedences of the criteria. The Modeling workgroup members felt that due to time-lag notification errors and temporal variation known to exist in indicator data series, day-to-day water quality notifications should not be issued using a single sample standard in conjunction with a microbial assay that takes longer than a few hours.

Related Key Near-term Science and Research Needs:

- Identify and develop indicators and corresponding methods that are appropriate for use in tropical and subtropical recreational waters. Conduct epidemiological studies to link those indicators with illness at tropical and subtropical locations. [1, 2, 4, 5]
- Increase the diversity of climatic regions and geographic areas where epidemiological studies are conducted. Also include different types of recreational waters, such as flowing (inland) waters. [3, 7]

- Gain better understanding of temporal and spatial variability in environmental sampling using culture-based and non culture-based methods and the implications for their use in representing water quality. [2, 4]
- Conduct research to better understand the human health significance of regrowth and persistence of indicator bacteria in nutrient enriched surface waters and sand/sediments and how those impact water quality determinations. [5]
- Ensure that QMRA studies conducted for estimating health risks from swimming in recreational waters include parameters and assumptions that are applicable for temperate, subtropical, and tropical climates. [4, 5]
- Determine if data are sufficient to conduct QMRA studies for evaluating health risks from flowing waters and collect data if possible and necessary. [7]
- Develop, test, and validate water quality models for different water types with a wide range of fecal sources and locations to improve notification accuracy. [6]

Determining Risk Level and Subpopulations of Concern

Workshop participants felt that (1) risks to children should be considered as the basis for determining risk level associated with new or revised criteria, and (2) timely risk communication and education of the public are critical for future acceptance of new or revised criteria. Social sciences research is needed to inform risk communication strategies and to examine what the public considers to be an "acceptable" level of risk for swimming-related illnesses. However, the Acceptable Risk workgroup members agreed that the term "acceptable risk" is flawed and should be avoided during the process of developing new or revised recreational AWQC.

Workshop participants felt that the risks to children should be better characterized and that a better understanding of risks to children may help inform policy decisions regarding selection of the risk level that will be associated with new or revised criteria. Epidemiological data indicate that children can have a higher risk of illness than adults from swimming in fecal contaminated recreational waters. Two factors contributing to this difference are (1) increased exposure from ingestion of higher volumes of water, and (2) greater susceptibility due to immunological differences compared to healthy adults. Note, workshop participants agreed that criteria should not be established based on the susceptibility of immunocompromised individuals; rather, targeted risk communication and public health messages could be used to advise these individuals that they are at increased risk of illness and are advised not to swim.

Workshop participants emphasized that clear and transparent communication with all stakeholders is important for the process of developing and implementing new or revised criteria. A tiered communication plan may be an effective approach for better informing the public about the criteria and how to interpret beach advisories and closings. Depending on the individual's level of interest or need, the information could be basic (e.g., a sign at a beach) or more detailed (e.g., pamphlets, websites). Workshop participants felt that EPA has a role in assisting State and local officials in developing risk communication strategies.

Related Key Near-term Science and Research Needs:

- Review existing recreational water-related epidemiological studies to evaluate risks to children. [1, 5]
- Include the ability to evaluate specific risks to children when developing new epidemiological studies. [1, 4, 5]
- Include some element of assessing acceptability of risk in the upcoming epidemiological studies, such as adding a sociological component. [5]
- Initiate studies to assess how impacted groups understand and perceive risks associated with recreational water use and what level of voluntary risk would be acceptable. [5]

Indicators and Methods for Measuring Fecal Contamination

Workshop participants felt that new or revised recreational AWQC should be based on fecal indicators. The level of occurrence and the types of pathogens in ambient waters vary greatly both temporally and spatially. Some pathogens are only present in very small concentrations, yet may present a public health risk. Because of these factors, methods to detect and quantify specific pathogens in ambient waters are not sufficiently developed at present to be practical for use in the near-term timeframe. Therefore, using suites of pathogens as the basis for new or revised criteria was not favored among workshop participants as a first "line of defense." However, pathogen monitoring may be useful as a subsequent tier for microbial water quality evaluation. For longer term research needs, further development of pathogen detection methods may result in a more important role.

There was broad expert support for new and/or improved methods for enumeration of fecal contamination and specific pathogens; however, methods need to be evaluated in the context of how they are going to be used for specific CWA applications. The workshop participants felt that rapid methods are needed in some but not all water quality management situations.

Future epidemiological study design efforts should integrate sanitary investigation and water quality modeling and incorporate characterization of the source of fecal contamination, including measurement of pathogens and indicators. The latter includes identifying the etiological agents in the source of fecal contamination and that cause illness in the subjects enrolled in the epidemiological studies.

Many of the enhancements of methods and tools discussed throughout these proceedings are likely to take longer than 2 to 3 years. Therefore, the further development of these methods and tools should be proactively pursued to facilitate future enhancements (beyond 2012). In situations where method and tool development proceed rapidly, then those methods and tools would become candidates for integration into new or revised criteria in the next 5 years.

Related Science and Research Needs:

- Evaluate and validate performance characteristics of methods that are linked to new or revised criteria and ensure that those methods are developed into official EPA Methods. [1, 2, 3]

- Develop and demonstrate the robustness of new methods for existing indicators (e.g., new ways of quantifying enterococci). [3]
- Develop new methods for new indicators, including but not limited to *Clostridium perfringens*, adenoviruses, coliphages, and *Bacteroides*, to either replace or augment the current bacterial indicators. [3, 4]
- Develop methods for enumeration of pathogens and indicators in wastewater. [1, 3]
- Develop methods for source identification to support watershed characterization activities. [3]
- Develop methods related to specific pathogens and fecal source identification for use in a second tier of tests to provide for a more refined assessment of risk of human illness. [1,3]
- Conduct fate and transport studies to determine relationships between current and new fecal indicators, index pathogens, and priority pathogens in treated effluents and in recreational water to better inform the applicability of those indicators and pathogens for specific CWA criteria uses. [2, 4, 7]

Summary

EPA would like to thank the workgroup chairs and other experts for their valuable contributions to the workshop deliberations, proceedings, and this Executive Summary, and on the state of the science of recreational water quality research and implementation issues. EPA intends to use these reports as it develops a critical path science plan that will help guide Agency research activities over the next 2 to 3 years in support of the development of new or revised recreational AWQC. These research activities could be a combination of Agency-sponsored studies, collaborative arrangements with external investigators and groups, or coordination of projects with external investigators to help supplement Agency efforts.