

Plan of Action: How to Clean Up America's Beaches

To improve beach water quality nationwide, our leaders need to adopt policies that clean up the sources of beach pollution. As discussed below, there are a number of current initiatives that could help deliver cleaner beach water, if decision-makers in Congress and the administration act on them. In addition, these same leaders should work to improve beach water monitoring and public information.

Clean Up Urban and Suburban Runoff

In those communities where urban and suburban runoff is moved off roads, buildings, and other impervious surfaces by storm sewers that connect directly to waterways, rainwater picks up bacteria in pet and wildlife waste and garbage. In 2010, polluted runoff and stormwater caused or contributed to 8,712 closing/advisory days at coastal and Great Lakes beaches, making it the largest known source of contamination problems.

Often, the best way of avoiding runoff-related pollution is to reduce the volume of stormwater flowing to the sewer systems that carry it to nearby water bodies. This can be done effectively using solutions that act to restore natural hydrologic conditions by increasing the amount of permeable, usually vegetated areas that minimize the volume of stormwater discharges. These techniques are collectively known as green infrastructure.

Green infrastructure technologies retain and filter rainwater where it falls and let it soak back into the ground, rather than dumping it into waterways. These approaches reduce pollutant flows and minimize the need for often more expensive traditional treatment by utilizing strategically placed rain gardens in yards, tree boxes along city sidewalks, green roofs that use absorbent vegetation on top of buildings, and permeable pavement. Green infrastructure also involves capturing and storing stormwater in rain barrels or cisterns and reusing it, most often for irrigation or other nonpotable uses. Many green infrastructure strategies have the added benefits of augmenting the water supply, providing wildlife habitat, minimizing greenhouse gas generation, and being aesthetically pleasing.

Leaders in Congress and in state and federal environmental agencies recognize the multiple benefits that green infrastructure provides and the multiple problems that urban and suburban runoff causes, so they have increasingly developed policies that aim to reduce stormwater flows by requiring sources of runoff to retain the stormwater they generate. As a result, there are several opportunities today to greatly improve how the nation handles runoff pollution and, consequently, improve water quality at America's beaches and in waterways around the country.

- *EPA's Reform of Clean Water Regulations for Stormwater Sources:* Existing EPA regulations for sources of runoff pollution have not been implemented in a particularly rigorous way. Historically, permits for stormwater systems have done a poor job of ensuring that discharges from those systems will not contribute to degraded water quality conditions. In particular, these systems frequently have not been required to implement programs to achieve a baseline level of stormwater reduction at new or redeveloped sites through retention or other means and rarely must ensure that already developed sites address runoff pollution by retrofitting properties. Moreover, current requirements do not often apply outside of urbanized areas (for example, to huge parking lots that discharge directly to local streams) or to transportation projects.

Fortunately, the EPA has initiated an effort to improve these regulations. NRDC and the Waterkeeper Alliance successfully sued the agency several years ago for not updating its standards for pollution from construction and development activities. In response, the agency issued new standards for discharges during site construction and committed to update the requirements that apply to long-term runoff from developed sites by proposing a rule this September and finalizing it next November.¹

The EPA should take full advantage of this once-in-a-generation opportunity to reform the minimum requirements applicable to urban and suburban runoff sources. To do so, the EPA's new rules must adopt new objective performance requirements for control of runoff volume from new and redeveloped sites, which will create strong incentives for the deployment of green infrastructure approaches. The EPA should also require retrofits in already existing public and private developed areas and as part of infrastructure reconstruction projects. Likewise, the agency needs to ensure that significant runoff sources are covered wherever they are located.

- ***Green Infrastructure for Clean Water Act:*** Despite green infrastructure's recognized benefits and the fact that it can help communities achieve cost savings as compared with other runoff control strategies, there remain a number of barriers to its effective use of green infrastructure in achieving clean water. Accordingly, Representative Donna Edwards (D-MD) and Senators Tom Udall (D-NM) and Sheldon Whitehouse (D-RI) have introduced the Green Infrastructure for Clean Water Act (H.R. 2030 and S. 1115), a bill that would improve the knowledge base about green infrastructure, help implement real-world demonstrations of the techniques, and better integrate green infrastructure into the day-to-day regulatory structure with which communities and developers are already familiar.

The Green Infrastructure for Clean Water Act would accomplish three things. First, it would establish between three and five Centers of Excellence for Green Infrastructure located in various regions across the United States. These centers would be housed in universities or research institutions and would investigate regionally relevant green infrastructure issues, develop manuals and best practices, and provide technical assistance to state and local governments. Second, the Act would provide green infrastructure project grants to state and local governments and to stormwater and wastewater utilities. These grants could be used for planning and developing green infrastructure projects, code revisions, fee structures, or training material, or for implementing, installing, and monitoring green infrastructure projects. Third, the Act would direct the EPA (and its regional offices) to promote and coordinate the use of green infrastructure in permitting programs, research, technical assistance, and funding guidance. Notably, it would direct the EPA to incorporate green infrastructure into requirements under consent decrees and settlement agreements.

- ***Transportation Legislation Regarding Runoff:*** Congress should require new and rehabilitated roadways to meet a performance-based standard to reduce runoff pollution, and it is presently considering legislation that could do just that.

First, Congress periodically passes bills that fund and authorize federal surface transportation projects around the country. The most recent federal transportation bill, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), was signed into law in 2005 and is due to be renewed. This bill provides a major opportunity to address runoff pollution from highways and roads; the new bill should contain provisions requiring all new and rehabilitated federally funded roads to meet a performance-based standard to reduce stormwater runoff pollution. In other words, the bill should require roadway projects to retain a certain amount of the runoff that their impervious surfaces generate. As an example of such a performance standard, Congress previously required certain federal facilities to maintain the "predevelopment hydrology" of a site in conducting specified development projects. That means that the project had to maintain the combination of runoff, infiltration, and evapotranspiration rates and volumes that existed on the site before human-induced land disturbance occurred. This kind of approach could serve as a model for transportation legislation, and Congress should require this standard to be met using green infrastructure whenever feasible.

Second, if Congress delays in passing a comprehensive transportation bill, or if it acts on a bill lacking needed stormwater standards, it should pass stand-alone legislation requiring federally funded roads and highways to control runoff pollution to an objective retention standard. Senator Ben Cardin (D-MD.) has introduced such a bill, the Safe Treatment of Polluted Stormwater Runoff Act (S. 898, also known as the STOPS Runoff Act), which would require

new highways and highway improvement projects to maintain or restore the predevelopment hydrology of the project site to the maximum extent technically feasible.

In addition to these important measures, state water pollution control officials and their counterparts at EPA have significant authority under the current Clean Water Act to demand that sources of runoff pollution—whether they are sewer systems or direct dischargers to the nation's waterways—have clean water permits that require onsite retention of stormwater and contribute to the achievement of water quality goals for receiving waters.

Eliminate Discharges of Human Sewage

Bacteria can sicken swimmers exposed to water that is contaminated by sewage. Targeting sewage pollution is therefore an important component of a policy strategy for making our beaches cleaner.

Address Combined Sewer Overflows

More than 700 communities nationwide, largely in the Northeast and near the Great Lakes, have “combined” sewer systems, meaning that sewage flushed from homes and businesses is carried by the same pipes that receive runoff from streets and other impervious areas when it rains. These systems were originally constructed many decades (in some cases more than a century) ago and are designed to allow the mix of raw sewage and runoff to overflow into nearby waters when rainfall is so significant that the sewage treatment plant cannot handle the full combined load of stormwater and sewage. Such events are called combined sewer overflows, or CSOs.

Although the EPA's combined sewer overflow policy has been in place since 1994, about 15 percent of the roughly 772 communities nationwide that are served by combined stormwater and sewage systems do not yet have enforceable long-term plans to control CSOs,² and many more jurisdictions still have years—even decades—before their plans will be completely implemented. EPA and the states need to work with CSO communities to get plans in place in all of these areas to fully address the harm to receiving waters.

Installing holding tanks that allow sewage generated during high-flow events to be treated is one way to prevent sewage overflows. Another way is to upgrade sewage treatment plants so that they can treat higher volumes of flow. However, as with stormwater, one of the most effective—and cost-effective—solutions to CSOs is the use of green infrastructure. The more a community can infiltrate, evaporate, or reuse stormwater before it flows into the combined sewer system, the less it has to detain and treat later.

There is a need to invest nearly \$300 billion over the next 20 years for water and wastewater infrastructure in the United States, of which \$63.6 billion is needed for CSO correction, according to the EPA.³ In the long term, Congress should assist state and local communities in reaching these levels by substantially increasing the federal resources available to meet clean water needs through the creation of a trust fund or other dedicated source of clean water funding. But Congress also needs to act today, by increasing annual funding to the Clean Water State Revolving Fund (CWSRF), which provides critical assistance for projects that repair and rebuild failing water and wastewater infrastructure, and which in recent years has also specifically focused funding on green infrastructure projects. Unfortunately, the CWSRF has been a target for cuts during recent budget debates—funding for the revolving fund was cut dramatically for the current fiscal year, and President Obama has suggested cutting nearly a billion dollars from the CWSRF and its companion program, the Safe Drinking Water SRF.⁴

At a minimum, Congress should restore these critical funds. But there is a strong case that they should be enhanced, not only because there are enormous unmet needs, but also because these investments yield tremendous benefits. In a recent letter, for example, 35 members of the Senate from across the political spectrum hailed the societal payback that comes from these programs:

Investments in water infrastructure provide significant economic benefits to the economy and enjoy a strong return on investment. The U.S. Conference of Mayors notes that each public dollar invested in water infrastructure increases private long-term GDP output by \$6.35. The National Association of Utility Contractors estimates that one billion dollars invested in water infrastructure can create over 26,000 jobs. In addition, the Department of Commerce estimates that each job created in the local water and sewer industry creates 3.68 jobs in the national

economy and each public dollar spent yields \$2.62 dollars in economic output in other industries. As you can see, this is a highly leveraged Federal investment that results in significant job and economic benefits for every dollar spent.⁵

In addition to these policy changes, the EPA and state agencies should use their authority under the current law to ensure that communities implement strong long-term control plans that achieve critical water quality goals for receiving waters, such as making them safe for swimming. CSO control plans increasingly are relying on enforceable commitments to install green infrastructure as a major component of reducing overflows. NRDC strongly encourages this approach. For instance, the Philadelphia Water Department and state environmental officials recently signed an ambitious agreement, that commits the city to deploy, over the next 25 years, the most comprehensive network of green infrastructure found in any U.S. city.⁶

Address Sanitary Sewer Overflows

Sanitary sewer systems carry human and industrial waste from buildings to sewage treatment plants. These sewer systems can discharge untreated sewage when the treatment plants are overwhelmed or malfunction or when sewer lines break, posing a threat to bathing beach safety.

After several false starts over the last 10 years, the EPA is again revisiting its regulations regarding SSOs, in an attempt to clarify certain legal requirements that have been applied unevenly around the country and to add new standard requirements aimed at preventing SSOs and repairing aging sewer systems.

In January 2001, the Bush administration pulled back a proposed rule to address these issues, which had been based on years of work by an advisory committee comprising wastewater utilities, environmental groups, and other interested parties. Instead, in 2003, the agency proposed a policy that would have sanctioned routine blending of partially treated sewage with fully treated sewage, in violation of Clean Water Act requirements. After receiving nearly 100,000 public comments, the EPA withdrew that draft policy and, in 2005, proposed another, stronger one, which had been jointly proposed by NRDC and the nation's largest association of wastewater utilities. But that policy was never finalized.⁷

NRDC supports the EPA's renewed efforts to develop an SSO rule that reaffirms the prohibition on "blending," except under extreme circumstances; creates standard requirements for upkeep and repair of aging sewer systems to prevent or reverse deterioration that leads to SSOs; and includes strong requirements for reporting, recordkeeping, monitoring, and the public's right to know when sewage overflows occur.

With respect to the Great Lakes region, Congress is considering legislation that would clarify that sewage blending is prohibited in much the same way as the EPA policy change would. That bill, called the Great Lakes Water Protection Act (S. 147/ H.R. 425), was introduced by Senators Kirk and Durbin and by Representatives Dold and Lipinski. In addition to the bypass provision, beginning in 2031, the bill would increase the daily penalty for violations of the bypass/blending requirements and would direct the penalties to a Great Lakes Cleanup Fund. The bill would also require that bypass notices submitted to the agency be made available on the Internet. NRDC supports this legislation. The EPA is already doing critical work throughout the Great Lakes region to reduce sewage dumping, and this measure reflects the recognition among members of Congress that more needs to be done to address persistent problems like sewage discharges from outdated infrastructure.

Reduce Agricultural Discharges and Agricultural Runoff

The EPA needs to plug the loopholes that allow industrial livestock operations to continue to discharge animal wastes into waterways. The EPA estimates that confined livestock produce about three times as much waste as people do nationwide; however, these operations lack treatment facilities for livestock waste even remotely comparable to those that treat human sewage. Moreover, many large feedlot operations historically avoided getting Clean Water Act permits, something made easier by lax federal regulation. This state of affairs was recently made worse by a court decision in which the U.S. Court of Appeals for the Fifth Circuit ruled that the federal Clean Water Act does not require these large industrial livestock facilities to obtain pollution control permits unless and until they discharge to protected waters, even when such facilities are designed and operated in a way that will predictably lead to a pollution release.⁸

Although this case is a setback, the EPA still has substantial untapped authority to regulate pollution from the livestock industry. For instance, under a settlement between the EPA and NRDC and other conservation groups, the EPA will propose a rule this October to undertake an important initiative to collect information from the concentrated animal feeding operation (CAFO) industry, an action that will better enable the agency to identify problem facilities and to assess the need for additional pollution controls. The EPA should use this opportunity to gather comprehensive information about the generation, storage, spreading, and off-site use of manure, in order to better track sources of animal waste that can pollute beaches.

In addition, the agency needs to revise its rules to close the loopholes and require all large feedlots to keep animal waste out of waterways. For example, runoff from fields used as manure disposal areas often is treated as exempt from the Clean Water Act, but the EPA can change that regulatory treatment and require facilities with such discharges to reduce their pollutant loadings.

Improve Coordination Between Sanitation and Public Health Officials

When a sewer overflow threatens beachwater quality, there needs to be immediate communication between those responsible for the overflow and those charged with protecting public health. The public has the right to know that an overflow or discharge has occurred and should be informed when it happens, not several days later, after beachwater monitoring results have been analyzed and reported. To close these communication gaps and improve coordination between sanitation and public health officials, leaders in Congress developed the Sewage Overflow Community Right-to-Know Act, a bill that has been considered in prior years and which is likely to be introduced again this Congress. The bill would amend the Federal Water Pollution Control Act, directing owners or operators of sewage treatment plants to: 1) institute an alert system for sanitary sewer overflows, 2) notify the public of such overflows within 24 hours in areas where human health is potentially affected, 3) immediately notify public health authorities and other affected entities of certain kinds of overflows, and 4) provide specified reports to the administrator of the EPA or the state. 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. NRDC also supports legislation to direct public health officials to inform environmental agencies when they find an exceedance of relevant beachwater quality standards so that its source can be addressed.

Last, as indicated above, the EPA is currently evaluating ways to improve the regulation and control of sanitary sewage pollution. One element of that initiative may be regulatory requirements about reporting overflows to public health officials and others and notifying the public as well. NRDC believes the EPA must develop strong comprehensive regulations to require the reporting of all sewer overflows, improved monitoring for sewer overflows, and public notification of all sewer overflows that could affect public health.

Improve Tools for Identifying and Remedying Poor Beachwater Quality

Enhance the BEACH Act: NRDC supports a bill that Congress has considered in prior years, called the Clean Coastal Environment and Public Health Act, which would reauthorize and increase the federal grants made available to states under the BEACH Act. This funding is crucial and should not only be authorized but should also be fully appropriated to provide states with the full support they need to tackle beachwater contamination and protect the public and the environment. Specifically, the bill would allow funding to be used for identifying sources of beachwater contamination (and might even provide support for remedying pollution sources); it would require the EPA to approve rapid test methods for monitoring beachwater pollution and ensure that states will use them; and it would improve coordination between the public health officials who monitor beachwater and the environmental agencies that regulate the sources of beachwater pollution.

Update Current Standards and Detection Methods

Current beachwater quality criteria are based on studies that were conducted in the 1980s. Much has been learned about detection methods in the last 25 years, and the EPA was mandated by the BEACH Act of 2000 to develop new standards.

The EPA will publish revised beachwater quality criteria by October 2012,⁹ with proposed criteria available in February 2012 and implementation guidance finalized by the end of 2013. In order to prepare the new criteria, the EPA sponsored epidemiological studies (studies that attempted to correlate beachwater quality with the illness rate of actual beachgoers) at a number of beaches, including Great Lakes beaches, a tropical beach, beaches impacted by urban runoff, and beaches impacted by treated sewage. The EPA also conducted research on modern monitoring techniques such as rapid testing methods.¹⁰

While final decisions have yet to be made, the EPA has announced that the new criteria will likely be based on the rate of gastrointestinal illness observed in swimmers, not on the occurrence of other beachwater-related illnesses such as rash, eye infections, earache, or respiratory symptoms. The criteria will represent a similar risk to marine and freshwater swimmers (at present, the criteria provide different levels of protection from illness for marine swimmers and freshwater swimmers). While tools for deriving site-specific criteria at individual beaches will probably be provided, the new criteria are unlikely to include adjustments for nonhuman sources of fecal contamination.

Today, beachwater quality is determined by the concentration of certain bacteria (*E. coli* or enterococcus) is measured. When these bacteria are present at higher concentrations, it indicates the presence of fecal contamination by warm-blooded animals and the potential for pathogens to be present. It is pathogens that cause illness, not the fecal indicator bacteria themselves, but pathogens exist in such small amounts that it is not feasible at the present time to detect unsafe levels directly. EPA's revised criteria likely will be based on fecal indicator bacteria as well.

Current approved methods for determining fecal indicator bacteria counts in beachwater depend on growth of cultures in samples and take about 24 hours to process. Because of this, swimmers cannot know until the next day if the water they swam in was contaminated. Likewise, beaches may be left closed on days when water quality meets standards because the prior day's water quality was poor. There is a great deal of interest in technologies that can provide beachwater quality results in two hours or less so that beach management decisions—whether or not to leave a beach open—can be made the same day that the water quality is measured. Some of these methods rely on detection of genetic material in fecal indicator bacteria cells; others depend on recognition of cell surfaces or whole cells. Methods that detect the presence of targeted enzymes are also being developed.

An example of a genetic method is quantitative polymerase chain reaction, or qPCR. This is a laboratory technique that can be used to quantify the presence of a targeted genetic sequence, and it has received the most attention in rapid test method studies. In the case of beachwater quality monitoring, the targeted genetic sequence would be a sequence from the fecal indicator bacteria named in water quality criteria.

One of the challenges in using qPCR to monitor for beachwater quality is that this method detects dead indicator bacteria as well as all live indicator bacteria, including unviable live indicator bacteria. Traditional culture methods detect only viable cells—only the live cells that reproduce get counted. Dead indicator bacteria do not predict the presence of pathogens as meaningfully as live indicator bacteria because pathogens in sewage are commonly killed along with indicator bacteria during treatment. At beaches where disinfected wastewater is present, qPCR can produce higher indicator bacteria counts than the current culture methods.

Another challenge in using qPCR is inhibition. Beachwater samples are not sterile and pure except for the indicator bacteria they contain. Many conditions that can be found in beachwater samples cause inhibition of qPCR reactions, which results in underestimated bacterial counts.

An example of a cell surface detection technology is immunomagnetic separation/adenosine triphosphate (IMS/ATP). IMS/ATP relies on antibodies that bind to targeted cell surfaces and provides concentrations for living cells only, because dead cells do not have intact surfaces for the antibodies to attach to. In addition to this advantage, IMS/ATP equipment may be less costly and more portable than the equipment needed for qPCR. A disadvantage of IMS/ATP is that antibodies for detecting strains of bacteria found in beachwater are not commercially available. Another disadvantage is that not all living cells are able to replicate, so IMS/ATP measures something that is somewhat different from what culture methods measure. Also, during analysis, antibodies may bind to non-target bacteria in some cases.

10 Simple Things Individuals Can Do

Everyone can help reduce beachwater pollution. For example, we can all take steps to reduce the amount of water sent to sewage treatment plants—which have the potential to overflow—and we can all play a part in reducing polluted runoff. Individuals can also make a difference by becoming educated and expressing their desire for clean, healthy water. Below are 10 simple actions individuals can take to improve our beachwater.

1. Be a good steward at the beach.

If you bring a picnic to the beach, pick up your garbage, and do not feed the birds or other wildlife. Seagulls and other animals are attracted to the garbage and food waste that people often leave behind on the beach, and feeding them will only encourage their permanent presence there. Waste from wildlife is one of the three largest known sources of bacterial pollution and can lead to beach closures. Ask your local beach management agency to invest in secure garbage cans with tight-fitting lids. Make sure children who are not yet toilet trained are dressed in a swim diaper and rubber pants or a similar tight-fitting outer garment. An extra layer of protection in addition to a swim diaper is necessary to help prevent bacteria from entering the water.

2. Clean up after your pet.

Don't leave pet waste on the ground. It could contain harmful bacteria and excess nutrients that can wash into storm drains and eventually pollute local waters. Flush it, bag it, or look for signs in public parks that direct pet owners to appropriate waste receptacles.

3. Conserve water.

Extra water use strains sewage system capacity. Here are some ways you can reduce the amount of water you use at home:

- Scrape—don't rinse—dirty dishes before loading them into the dishwasher.
- Do not let water run unnecessarily when brushing your teeth or shaving.
- Install a water-saving toilet to conserve thousands of gallons annually.
- Install faucet aerators and a water-efficient showerhead to cut the amount of water you use and to save energy by reducing hot water use.

4. Direct runoff to the soil, not the street.

Help keep stormwater from running off your property and into local waterways and the sewer system. Direct rain gutters and downspouts on your home to soil, grass, or gravel areas rather than blacktop, cement, or other hard surfaces. Learn about creating a rain garden or using rain barrels. Sweep your driveway and sidewalks instead of hosing them down.

5. Don't pour it down the drain.

When you dump paint, oil, harsh cleansers, and other hazardous products down the drain, they can find their way into nearby bodies of water. Contact your local sanitation, public works, or environmental health department to find out about hazardous waste collection days and sites. Don't wash your car in the driveway or street; instead, do it at a car wash, where contaminated rinse water may be treated before being discharged to the sewage system.

6. Maintain your septic system.

Have your septic tank cleaned out every three to five years. Such maintenance prolongs the life of your system and can help prevent groundwater and beachwater contamination.

10 Simple Things Individuals Can Do

7. Practice proper lawn and garden care.

Use natural fertilizers such as compost on your garden, and minimize the use of chemical fertilizers, pesticides, and herbicides. To reduce the amount of polluted runoff, landscape with natural vegetation rather than lawns, which require fertilizers and herbicides. Do not allow water used to irrigate your landscaping to hit paved surfaces and run off.

8. Practice proper marine and recreational boating waste disposal.

Dispose of your boat sewage at onshore sanitary facilities. Don't dump waste or trash overboard. Boating wastes discharged into coastal waters can be a significant cause of high pathogen concentrations.

9. Support local, state, and federal legislation that promotes the cleanup of pollution sources.

Write to your representatives and senators and let them know you support strong beach legislation and clean water protections. Tell your government representatives to move forward quickly to address sewage overflows and stormwater. Make sure you tell officials that you are willing to pay for programs to monitor beaches and reduce runoff pollution.

10. Learn about the water quality at local beaches and choose your beach carefully.

Go to NRDC's vacation beaches website (www.nrdc.org/water/oceans/ttw/titinx.asp), the EPA's Beach Advisory and Closing Online Notification website (http://iaspub.epa.gov/waters10/beacon_national_page.main), or your local beach manager (usually the local public health authority), all of which have data on beach monitoring and notification policies and on closings and advisories. Also, to show your concern, ask the local beach manager the following questions: What are the sources of pollution affecting the waters where I swim? What sort of water quality monitoring is performed at these beaches? Are beaches always closed when monitoring shows that the bacterial standard is exceeded? What is the current status of these waters (are they closed or open?), and what warning signs can I look for? Whenever possible, swim at the beaches that your research shows have the cleanest waters or are carefully monitored with strict closure or advisory procedures in effect. Stay away from beaches with visible discharge pipes, and avoid swimming at urban beaches after a heavy rainfall.

NOTES

- 1 See generally U.S. EPA, Proposed National Rulemaking to Strengthen the Stormwater Program, <http://cfpub.epa.gov/npdes/stormwater/rulemaking.cfm>.
- 2 U.S. EPA, National Water Program Best Practices and End of Year Performance Report: Fiscal Year 2010, Subobjective: Safe Swimming, at 53, http://water.epa.gov/aboutow/goals_objectives/waterplan/upload/FY2010_swimming.pdf.
- 3 U.S. EPA, Clean Watershed Needs Survey: 2008 Report to Congress, at v & vii, <http://water.epa.gov/scitech/datait/databases/cwns/upload/cwns2008rtc.pdf>.
- 4 See Pub. L. 112-10, 112th Cong., 1st Sess., § 1738 (April 15, 2011); Budget for Fiscal Year 2012: Environmental Protection Agency, <http://www.whitehouse.gov/sites/default/files/omb/budget/fy2012/assets/environmental.pdf>.
- 5 Letter from Senator Barbara Boxer, et al., to Senator Daniel Inouye et al. (May 26, 2011), http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=f51ee9df-75a9-4767-ba24-c0f7f40fdde7.
- 6 See Larry Levine, Natural Resources Defense Council, "Philadelphia Gains Approval of Landmark Green Infrastructure Plan, a Model for Smart Water Practices Nationwide," http://switchboard.nrdc.org/blogs/llevine/philadelphia_gains_state_appro.html.
- 7 See generally 75 Fed. Reg. 30,395 (June 1, 2010).
- 8 *Natl. Pork Producers Council v. U.S. EPA*, 635 F.3d 738 (5th Cir. 2011).
- 9 U.S. EPA, National Summary: 2010 Swimming Season Update, http://water.epa.gov/type/oceb/beaches/seasons_2010_national.cfm.
- 10 U.S. EPA, Recreational: Water Quality Criteria, <http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/index.cfm>.