



Healthy People 2010

Action Steps to Create Healthier Living Environments



Goal 8: Promote health for all through a healthy environment.

Objective 9: Reduce the number of beach closings that result from the presence of harmful bacteria.

America's waters and aquatic ecosystems are one of our greatest natural resources. Whether used

for drinking, swimming, fishing, transport, or enjoyed for their beauty alone, the large bodies of water across the United States are highly valued, and are safeguarded by environmental laws and policies. However, despite these safeguards, our water bodies are contaminated and polluted by both natural and anthropogenic processes. As such, beaches often suffer closings or advisories that caution people as to the danger that entering the water may pose to their health.

Waterborne illnesses may include diarrhea, respiratory illnesses, skin and eye and ear infections, or other viral and bacterial infections. While the most common cause of pollution that causes beach closings is increased bacteria levels, the second largest results from increased storm water runoff. Local monitoring and management programs for recreational waters vary widely, which results in different standards and levels of protection across the country. Thus, while some beaches and their patrons are adequately informed of risks, many others are not even aware that there is the potential for a problem. As such, it is important to be proactive in preventing bacterial incidents from occurring. As storm water runoff has been identified as a major contributor to beach advisories and closings, and can carry bacteria, it is necessary to recognize the link

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between the built environment and storm water runoff, and thus health.

The benefits of reducing bacteria that cause beach closings through land use planning and community design initiatives are:

- Decrease in waterborne illness among recreational water users.
- Maintain healthier aquatic ecosystems.
 - Healthier oceans, rivers, and bays.
 - Decreased storm water runoff.
 - Increased aesthetics of our nation's beaches.

Storm water runoff greatly increases as the amount of impervious surface in an area increases; so areas that

have a large proportion of paved surfaces, will produce large amounts of runoff during times of precipitation, particularly if there is little or no vegetation to collect and slow the water. It is important to build communities in manners that minimize the amount of impervious surface while providing ample vegetative cover in order to lessen the amount, and therefore impact, that stormwater runoff has on the water system and consequently on human health. While it is difficult to measure all of the negative health affects on humans, according to the EPA, studies have consistently found an association between gastrointestinal illness and exposure to contaminated recreational waters. Despite monitoring efforts, Americans continue to face risks of illness from recreating in coastal areas, lakes, and rivers that are contaminated with disease-causing microbes, with elevated bacteria levels accounting for about 75 percent of



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closings and advisories. Thus land use planning initiatives can benefit human health through designing our communities in ways that minimize increases in stormwater and thus on beach closings because of bacterial presence.

GENERAL STEPS AT THE PLANNING LEVEL

Each of the following action steps involve community planning, education, or regulations that can be implemented locally to help in designing communities that have minimal impact on stormwater systems. Because stormwater can negatively impact health through our recreational waters, public health practitioners have a role to play in the planning process. Allowing for more choices in the way that communities are built, will result in designs that minimize runoff and protect our nation's waters, thus decreasing beach closures due to bacteria.

- Support smart growth legislation, which does not require the segregation of land uses (which can lead to increased water pollution from runoff, and particulates).

Smart Growth Fact Sheet

www.epa.gov/smartgrowth/pdf/whtissg4v2.pdf

Congress for the New Urbanism, Model Codes

www.cnu.org/pdf/code_catalog_8-1-01.pdf

- Support conservation subdivision design, which creates more open space that can serve as filtration for water.

Green Development Conservation Subdivision Design

www.sustainable.doe.gov/greendev/subdivision.shtml

- Retain natural waterways during development and include them in the community. This will provide open space, water filtration, and a sense of ownership for community members that can lead to the protection of the waterway.

- Encourage cluster development, a technique in which all built-upon areas are placed together rather than spread out over the entire site. Using clustering, developers can place the desired residential or commercial space as far as possible from the receiving water and minimize impervious surfaces such as access roads.

Wisconsin Department of Natural Resources

www.dnr.state.wi.us/org/es/science/landuse/tools/position_paper.pdf

In Illinois

www.cnr.colostate.edu/class_info/rr480/lgien10.ps.pdf

- Minimum requirements can be established for tree coverage.
- Advocate for vegetation for roadside drainage, and route stormwater over vegetated areas to encourage infiltration and decrease runoff.
- Support having buffer zones around bodies of water.
- Encourage adequate setback requirements that prevent development from being too close to the water to reduce pollutant loading of stormwater runoff.

SPECIFIC ACTION TO TAKE IN YOUR NEIGHBORHOOD

Each of the following action steps can be created at the neighborhood level by involved parents and concerned citizens, in order to work toward protecting watersheds and waterways that can impact human health with the presence of bacteria.

- Join or form a watershed protection group in your neighborhood to provide the public health presence and message.

EPA Information Database for Local Watersheds

www.epa.gov/surf/

EPA Catalog of Watershed Groups

www.epa.gov/adopt/network.html

Watershed Restoration Institute at the Center for Watershed Protection

www.cwp.org/Watershed_Institute.htm
www.groundwater.org/Guardian/ggindex.htm

- Be a volunteer monitor of nearby waters.

EPA, Monitoring and Assessing Water Quality

www.epa.gov/owow/monitoring/vol.html

- Encourage local officials to adopt erosion and sediment control ordinances.

EPA Model Ordinances

www.epa.gov/owow/nps/ordinance/ml2
www.epa.gov/owow/nps/ordinance/osm2.htm

- Work with your local authorities to create a monitoring program if one does not exist in your area.

Macomb County Health Department

<http://macombcountymi.gov/PublicHealth/Env%20Health/Beaches/Beach%20Presentation%20Manual.html>

Volunteer Water Quality Monitoring, National Facilitation Project

www.usawaterquality.org/volunteer/RelatedResearch/

- Ensure proper maintenance of onsite management systems.

Voluntary National Guidelines for Management

www.epa.gov/owm/mtb/decent/index.htm

- Encourage environmental stewardship at an early age by teaching children how to behave in ways that will protect water quality.

Kids and Water Safety

www.epa.gov/water/kids.html

- Advise residents to avoid swimming after a heavy rain.
- Advise residents to look for storm drains along the beach, and avoid swimming near them.
- Look for trash and such other signs of pollution in the water. These kinds of pollutants may indicate the presence of disease-causing microorganisms that may also have been washed into the water.

Local health agency staff can work with their communities to advocate for the land use planning and community design initiatives that allow for minimal impact on water quality. From larger-scale policy initiatives, to changing personal behaviors, health agency staff can serve as advocates and models for change in their communities by participating in the suggested action steps listed here. These suggested action steps, as well as others, can help in achieving the *Healthy People 2010* goal of reducing waterborne disease outbreaks arising from water intended for drinking among persons served by community water systems.



THROUGHOUT THE DAY

During each day, individual health officials can take steps that will help to protect water quality in order to decrease the number of beach closings from bacterial presence. By implementing these steps in your neighborhood, serving as a model within the health agency and community, and encouraging residents in your community to do so as well, overall beach closings can be decreased.

- Direct downspouts to lawns/gardens, to allow runoff to soak into the ground more gradually.

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