



# Combined Sewer Overflows (CSOs) in New England

## What is a CSO?

Combined sewer overflows are sewer systems that were designed to carry sewage and storm water in the same pipe to a sewage treatment plant. After heavy rainfall or snowmelt events, the wastewater volume is often more than the sewer system or treatment plant can handle. For this reason, combined sewer systems were designed to overflow after rain events and result in excess wastewater being discharged directly into rivers, lakes and coastal areas. The wastewater the CSOs carry not only contains storm water but also untreated human waste and industrial waste, toxic materials and floating debris.

## Overview of CSOs in New England:

Sewage discharges from combined sewer overflow pipes are a major problem in this country and are a big reason why many of the nation's rivers remain unsafe for swimming and fishing. The problem is especially acute in New England, where more than 100 communities are burdened with CSO pipes that discharge hundreds of millions of gallons of untreated sewage and stormwater into waterways after heavy rains. Eliminating these discharges is an enormous financial challenge. In New England alone, the price tag for eliminating CSOs could run as high as \$4 billion. EPA New England recognizes the significant financial burden that the CSO abatement program will pose for the region and is working with communities to develop cost effective plans that maximize environmental and health benefits with affordability.

## What are the Local Challenges for New Englanders?

CSO impacts on rivers that may be primary drinking water sources for communities are particularly serious. CSO discharges are a major pollution source to our rivers and are a big reason why water quality standards can be violated after heavy rains. For example in Lowell, Massachusetts, there are nine CSO outfall pipes that discharge more than 10 million gallons of combined sewage and storm water into the Merrimack River during a typical one-inch rainstorm. EPA is also working with Haverhill, Nashua, Greater Lawrence Sanitary District, Manchester, NH and other cities along the Merrimack to address their CSO problems.

## What are the Environmental and Public Health Impacts of CSOs?

CSO discharges have widespread impacts across New England, causing beach closings, shellfishing restrictions and limiting fishing and other recreational



activities. In some instances, CSOs discharge raw sewage into rivers that also serve as primary sources of drinking water. Exposure to viruses, bacteria, pathogens and other CSO-related pollutants or toxics is an obvious public health concern. Swimmers, canoeists, and others exposed to CSO contaminants are vulnerable to gastroenteritis, respiratory infections, eye or ear infections, skin rashes, hepatitis and other diseases. Children, the elderly, and people with suppressed immune systems are especially vulnerable.

Wildlife and aquatic habitat are also adversely affected by CSO pollutants which lead to higher water temperatures, increased turbidity, toxins and reduced oxygen levels in the water.

### **What are Some Innovative Approaches from EPA?**

EPA realizes that fixing CSOs is an expensive proposition and is committed to finding innovative abatement strategies that meet environmental standards while ensuring that the projects are affordable to local communities. EPA has adopted a CSO Control Policy that is aimed at minimizing CSO pollution impacts to water bodies while requiring case-by-case community approaches that give state and local flexibility in development of the solutions. EPA New England has combined enforcement and assistance efforts to show flexibility in crafting projects and implementation schedules. Communities are given flexibility through lengthy schedules to do the work and encouragement to use technologies that maximize environmental benefits. EPA New England is the first to use a watershed-based approach to prioritize CSO controls along with other critical environmental needs so that taxpayer dollars are spent to maximize environmental returns—more environmental benefit at the least cost.

### **Among the cities where EPA has shown flexibility and innovation in tackling CSOs:**

#### **1. Boston Harbor in Boston, MA:**

In Boston Harbor, EPA New England worked with the Massachusetts Water Resource Authority (MWRA), environmental groups, and the state to negotiate an agreement on priorities for [CSO controls](#). Prioritizing CSO controls and agreement on changes in water quality standards to reflect those priorities allowed this CSO plan to provide very stringent controls in recreational beach areas, such as Dorchester Bay, in return for lesser levels of control in shipping channels. Beaches in the Boston Harbor, like Constitution Beach, are closed far fewer days today than in the past, largely thanks to the elimination of CSOs. Improvements to the MWRA wastewater system have resulted in much of the wastewater that used to flow to CSOs now being treated at the Deer Island



sewage treatment plant. Today, it takes a much larger rain storm to close a Boston Harbor beach.

## **2. Merrimack River in Manchester, NH:**

EPA's CSO agreement with Manchester is a good example of our flexible community-by-community approach. The agreement here has received enthusiastic support of environmental groups as well as state and local leaders, including Governor Shaheen and Mayor Baines. The agreement requires the city to invest \$52 million in the first phase of a project to control CSOs along the Merrimack River. This phased approach reduced Manchester's upfront financial burden by more than \$50 million—or \$500 per resident. By allowing the CSO work to be done in phases, EPA was able to negotiate another \$5.6 million in other environmental improvements, including polluted runoff controls along the river, purchase of important wetland areas in the city and a program to reduce childhood asthma and lead poisoning.

### **For more information on CSOs, visit:**

<http://www.epa.gov/region1/eco/cso/index.html>

[http://cfpub.epa.gov/npdes/home.cfm?program\\_id=5](http://cfpub.epa.gov/npdes/home.cfm?program_id=5)

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