

How is water quality being protected?

Water quality standards are the cornerstone of a state's water quality protection efforts and are composed of three parts: classification, criteria, and anti-degradation policy.

Classification

States define their goals for a water body in terms of both the use of the water and the quality necessary to protect that use. For example, *Class A* waters are, or have the potential to be, pristine. These are generally drinking waters and efforts should focus on maintaining the highest level of quality. With *Class B* waters, absolute purity is not considered a reasonable goal because human activities are expected to degrade water quality. A lake which supports fishing and swimming might fall into this classification. Class B status means that the water is *not required* to be of the highest quality to be acceptable.

Criteria

Water quality criteria set limits on a particular pollutant or on a condition of a waterbody. Each criterion represents the highest concentration of a pollutant that does not present any appreciable risk to aquatic organisms or to human health. Some common parameters include fecal coliform bacteria, dissolved oxygen, pH, solids, chemicals that can be toxic to humans or aquatic organisms, color and turbidity, oil and grease, and taste and odor.

Anti-degradation Policy

Each state's policy is designed to protect high quality waters in three ways:

- ◆ Maintaining all existing uses (and water quality necessary to support those uses) as a baseline.
- ◆ Allowing deterioration of high quality water only if the public is involved in the decision and supports it.
- ◆ Designating unique areas as Outstanding National Resources Waters (ONRWs). With ONRW designation, a state can implement different standards to support these areas.

Regulatory Requirements

CSOs are regulated under the federal National Pollutant Discharge Elimination System (NPDES) permit program and the federal Clean Water Act. The U.S. Environmental Protection Agency (EPA) administers these programs and on April 19, 1994, published the CSO Control Policy as an update to the 1989 National CSO Control Strategy.

The first significant goal of the CSO Policy was the implementation of the following **Nine Minimum Controls** which do not require significant financial costs, construction activities, or engineering studies.

1. Proper operation and regular maintenance programs for the sewer system and CSO discharge points.
2. Maximum use of the collection system for storage.
3. Review and modification of the industrial pretreatment program to assure CSO impacts are minimized.
4. Maximization of flow to wastewater treatment facilities.
5. Prohibition of CSO discharge during dry weather.
6. Control of solid and floatable material in CSO discharges.
7. Pollution prevention programs that focus on contaminant reduction activities.
8. Increased efforts to ensure that the public receives adequate notification of CSO occurrences and CSO impacts.
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

Do you want to find out more about water quality issues? NEIWPCC has other informative brochures on topics like nonpoint source pollution, septic systems, pollution caused by two-stroke marine engines, and microbial contamination in drinking water. Visit www.neiwpcc.org/infobr.html to download these brochures.

FOR MORE INFORMATION:

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Wastewater Management
<http://cfpub.epa.gov/npdcs/>

CONNECTICUT
Connecticut Department of Environmental Protection
<http://dep.state.ct.us/wrt>

MAINE
Maine Department of Environmental Protection
Bureau of Land & Water Quality
www.state.me.us/dep/blwq

MASSACHUSETTS
Massachusetts Department of Environmental Protection
www.state.ma.us/dep

NEW HAMPSHIRE
New Hampshire Department of Environmental Services
Wastewater Engineering Bureau
www.des.state.nh.us/wwve

NEW YORK
New York State Department of Environmental Conservation
www.dec.state.ny.us

RHODE ISLAND
Rhode Island Department of Environmental Protection
www.state.ri.us/dem

VERMONT
Vermont Agency of Natural Resources
www.anr.state.vt.us

What Do You Know About...

Combined Sewer Overflows?



New England Interstate Water Pollution Control Commission

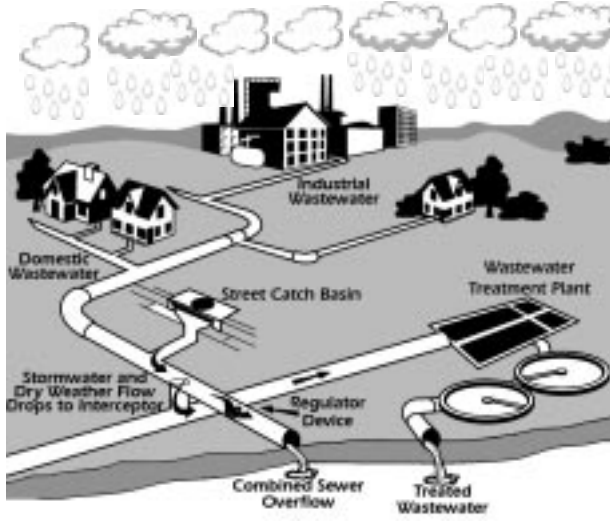
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What are Combined Sewer Overflows?

A combined sewer system is one that transports both rainwater runoff and sanitary flows, in one pipe, from homes and businesses to a treatment facility. During heavy rainfalls or sudden snowmelts, the flow in the sewer system may exceed the capacity of either the pipe or the treatment facility. As a result, part of the combined wastewater flow may be diverted directly into a nearby waterbody – a stream, river, wetland, lake, or estuary. These events are known as Combined Sewer Overflows or CSOs.



Source: National Small Flows Clearinghouse

What impact do CSOs have?

CSOs have been found to be a source of bacterial contamination, to contribute to the reduction of dissolved oxygen levels, and to increase nutrient levels to above normal ranges. The main pollutants in CSOs are human and industrial wastes, harmful materials such as oil and pesticides, and floating debris washed into the sewer systems by rainfall or snowmelt.

Bacterial Contamination

One of the main concerns associated with CSOs is the discharge of untreated human wastes. Although diluted, these wastes may contain pathogenic bacteria

and viruses. These organisms may cause such illnesses as dysentery and hepatitis when people swim in CSO-affected waters or eat contaminated shellfish.

Dissolved Oxygen

When organisms break down biodegradable waste, they use the dissolved oxygen in water. An excess of biodegradable waste in a waterbody may therefore cause a reduction in the oxygen supply, resulting in fish kills, odor, and overall degradation of water quality.

Nutrient Enrichment

Overloads of nitrogen and phosphorous, which stimulate plant growth, may lead to rapid growth of algae and other plants, which contribute to the depletion of oxygen levels in the water.

What can I do to help prevent CSOs?

Converting combined sewer systems to more modern collection and treatment facilities capable of transporting stormwater and wastewater separately or storing the combined flows can be enormously expensive.

The good news is that there are some basic actions that can be taken by individuals and businesses to reduce the impact of CSOs in your area.

In some communities, these simple procedures may be enough to decrease CSOs and achieve better, safer water quality!

Step 1: Reduce Water Usage in Your Home.

Conserving water reduces the occurrence of CSOs by limiting the demand on wastewater collection and treatment facilities.

- Reduce water pressure.
- Use front-loading washing machines.
- Install low-flow showerheads and faucets or shower flow control devices (such as aerators).
- Turn off faucets while shaving and brushing teeth.
- Run washing machines and dishwashers only when full or adjust cycle settings to match loads.

- Fix leaking or dripping faucets and toilets that “run” continuously.
- Replace old high-flow toilets (4 to 7 gallons per flush) with water-saving (3.5 gallons) or ultra low-flush toilets (1 to 2 gallons). (Note that plumbing in some buildings may not be adequately designed to accommodate certain low-flush toilets).
- Install dams in toilet tanks, or fill a milk jug or plastic container with rocks and place it in the toilet tank.

Step 2: Properly Dispose of Waste and Reduce Your Use of Toxics.

Everything that gets poured down a household drain, dumped in a catch basin on the street, or simply tossed onto the curb will eventually get washed into the sewer system. When the system is overloaded by storm events, these materials can be discharged directly into local rivers, streams, ponds, estuaries, and wetlands. They can also potentially back up into groundwater and drinking water supplies.

- Apply pesticides/fertilizers in recommended amounts based on soil tests.
- Don't sweep sand, grass clippings, leaves, litterbox contents, or other wastes into storm drains.
- Maintain your lawn using Integrated Pest Management (IPM) techniques (natural control of pests). Contact the Environmental Protection Agency for more information: www.epa.gov or (888) 372-5427.
- Dispose of used motor oil at a recycling facility.
- Dispose of automotive fluids, paints, and pesticides at a household hazardous waste collection site.



Step 3: Eliminate Stormwater and Groundwater Discharges.

- Redirect roof drain, gutter, and downspout connections from discharging to the sanitary or combined sewer.
- Redirect area and yard drains from discharging to the storm drain.
- Redirect sump pumps to allow them to flow overland.



What if all CSOs are eliminated?

The impact CSOs have on our receiving waterbodies is difficult to quantify because the frequency of occurrence, volume, and characteristics (e.g. concentrations of various pollutants) vary in each location and with each runoff event.

Although CSOs are not the most significant source contributing to the degradation of water quality, eliminating them is part of the solution.

Ensuring that the receiving waters meet water quality standards will require management of the entire watershed, including CSO discharge locations. Managing the watershed is based on understanding that there are connections between what we do on land and the quality and quantity of water in our rivers.

