Less Untreated Sewage Is Entering Casco Bay after Heavy Rains

Casco Bay Estuary Partnership

Communities bordering the Bay have made significant progress reducing Combined Sewer Overflow discharges, and additional improvements are planned.

CSO discharge point on the Portland waterfront, adjacent to the Casco Bay Ferry Terminal.

The More Rain that Falls in a Given Year, the More Untreated Sewage Enters Casco Bay

When sewer systems were built more than a century ago, many cities laid only one set of pipes to carry both human waste and runoff. Since passage of the Clean Water Act, communities have built wastewater treatment plants, and diverted the flow from these combined sewers to the plants for treatment. But heavy rain events can overload the system, discharging untreated human waste into Casco Bay via what are known as "Combined Sewer Overflows" (CSOs).

While Portland, South Portland, Westbrook, and Cape Elizabeth continue to operate CSOs, they have made significant progress in recent years reducing CSO discharges. Both the volume and frequency of discharges are weather-dependent, but even in recent high-rainfall years, discharges have been declining.

Active Combined Sewer Overflows (2014)

Town	Locations	Events	Volume†
Portland (DPW and PWD)	31	75	414.42
South Portland	6	9	15.531
Westbrook	5	70	11.93
Cape Elizabeth	1	12	1.44
Total	43	132	187.52

† Millions of gallons

Baxter Boulevard CSO storage conduit during installation.

Formally, 43 active (*i.e.,* permitted by DEP) CSO locations remain in our region, but not all these sites have been discharging in recent years. Several locations are being decommissioned but are still considered active, while others discharge only during the largest of storms. In 2014, total CSO discharges directly to Casco Bay or to its tributaries totaled about 187.5 million gallons. Casco Bay's CSOs had 166 overflow "events" that year (Breau 2015).

Over the last 15 years, annual CSO discharges around Casco Bay have been declining on average by about 35.9 million gallons per year. For well over a decade, discharges have declined by one million gallons per inch of rainfall annually, thanks to continuing efforts to address CSOs. Whereas 24.9 million gallons of untreated CSO wastes discharged per inch of rainfall in 2000, only 7.9 million gallons discharged per inch of rainfall in 2014.

In Portland, new facilities hold combined stormwater and wastewater for treatment, instead of discharging it into the Bay.

Underground Storage Conduits Help Reduce CSO Discharges to Casco Bay

Portland, which has the vast majority of CSO discharges (not only within the Casco Bay watershed, but statewide), has begun work on a 15-year, $170 million program to further reduce CSO discharges. Half the funds to be raised by Portland's new stormwater service charge are slated to be spent on CSO remediation.

In 2013, as part of an ongoing effort to reduce CSO discharges, Portland constructed two large (one million gallon) underground storage conduits under Baxter Boulevard and Payson Park, on the north side of Back Cove. These facilities trap and hold combined stormwater and wastewater (in all but the largest storms) long enough to allow the waste to be pumped to the sewage treatment plant without discharges to the Bay. Additional storage conduits are planned south of Back Cove and along the Fore River.

For additional references and information, please view the Bibliography of the full *State of the Bay 2015* report at www.cascobayestuary.org/state-of-the-bay-2015.