



TREADING DIRTY WATER

NYC'S COMBINED SEWER OVERFLOW PROBLEM

About half the time it rains in New York City, once a week on average, raw sewage and polluted runoff combine in sewer pipes and overflow – without treatment – into the City's surface waters. The event is called a combined sewer overflow (CSO) and hundreds of them are triggered simultaneously around the five boroughs during steady rainfall. In an average rain year, about 27 billion gallons of this untreated wastewater pour out of the City's sewer system to nearby waters.

CSOs contain raw sewage from homes, businesses and industries, as well as storm water runoff and all the debris and chemicals that wash off the street or are poured in storm drains. They contain untreated human waste, ammonia, pesticides, nutrients, petroleum products, oxygen-demanding substances (which harm fish) and other potential toxins and pathogenic microorganisms associated with human disease and fecal pollution.

The frequency and intensity of CSOs fluctuates with the weather. The more rain that falls in a given period of time, the more likely it is that bottlenecks will occur in the collection system and/or treatment plants will reach their capacity limits. Extended light rain will trigger CSOs, as will shorter, heavier storms.

WATER QUALITY IMPAIRMENTS CAUSED BY CSOs

CSOs cause violations of water quality standards in the waters surrounding the five boroughs. New York State classifies 18 of NYC's waterbody segments as substantially "impaired" for human uses or aquatic life as a result of pathogens, oxygen demand, nitrogen or trash discharged in CSOs. This list includes Newtown Creek, Gowanus Canal, Jamaica Bay, the Bronx River and many others. Other City waterbodies are considered "stressed" or are otherwise harmed by CSOs.



Sewage and stormwater flow from a Newtown Creek CSO.

These water quality violations impair the ecology of New York's water and interfere with uses of those waters, such as fishing, swimming, and boating. A recent report found that no-swim days at beaches caused by sewage and contaminated storm water runoff doubled in the last year. In 2003, the NYC International triathlon turned into a duathlon because the waters were too polluted by CSOs to allow for safe swimming. In some smaller, more heavily impacted waterways, the water turns white in the summer due to the incredibly high bacterial levels from CSOs. At times, the stench of the overflows makes the waterfront air in these areas unbreathable.

And the CSOs continue to mar the laudable efforts undertaken in recent years to improve public access to the City's waterfront. Many CSO outfalls discharge directly into Hudson River Park's estuarine sanctuary and other waters where the shoreline is being opened and improved for public access.

WHAT IS BEING DONE ABOUT THE CSO PROBLEM?

The Clean Water Act requires that New York City develop and implement a long term plan for controlling CSOs to meet all existing water quality standards. This year, the City proposed more than \$2 billion in end-of-pipe projects to be constructed over the next 15 years. These projects will increase CSO capture rates from around the current 70 percent to around 75 percent, a much less impressive figure than other cities like Boston that capture up to 90 percent.

Riverkeeper has been advocating for a hybrid approach to stormwater control. In addition to some end of pipe projects, the hybrid approach would embrace aggressive source control strategies to capture stormwater where it falls—before it enters the sewer system. Source control strategies include green roofs, sidewalk parks, street trees, and permeable pavement. These strategies are cost competitive with end-of-pipe controls at reducing CSOs and confer substantial benefits by greening neighborhoods, lowering summer temperatures, reducing energy expenditures, reducing smog, and helping the City prepare for the effects of climate change. In a positive development this past summer, Mayor Bloomberg has tasked his agencies to investigate how to make source control a reality. Riverkeeper's report on source control, *Sustainable Raindrops: Cleaning New York Harbor by Greening the Urban Landscape* can be viewed at riverkeeper.org.

460 CSO pipes throughout the five boroughs dump **27 billion gallons** of untreated wastewater into NYC's waterways each year. CSO events occur somewhere in NYC **over 70 times each year** – an average of at least one overflow each week. In some areas, 1/10 inch of rain in an hour can trigger a CSO event.

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