

Combined Sewer Overflows (CSOs)



WHY DO WE CARE?

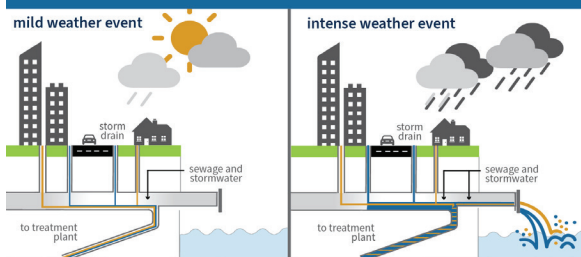
Combined sewer systems convey both sewer and stormwater runoff to wastewater treatment plants. Under normal conditions, wastewater is properly treated. However, during large storm events when the capacity of these systems is reached, untreated or partially untreated volumes overflow into waterways, like rivers and lakes. These events are called Combined Sewer Overflows (CSOs). In the State of Vermont, municipal staff are required to report these overflow occurrences to the Department of Environmental Conservation to alert the public.

Wastewater that is not properly treated at a wastewater treatment plant or in a septic system can contain a number of harmful contaminants including:

- Nutrients like nitrogen and phosphorus that contribute to eutrophication.
- Pathogens like hepatitis, norovirus, bacterial meningitis, *Cryptosporidium*, *Candida*, salmonella, and *E. coli* that can cause human illness.
- Pharmaceuticals that impact fish and wildlife.
- Metals like lead, mercury, cadmium and others that are toxic to humans and bioaccumulate in fish.
- Other pollutants including microplastics, detergents, debris, pesticides, fat, oil, grease, solvents, engine oil, brake dust, and antifreeze.

While some of these pollutants can break down over time, many persist in our waterbodies. For example, fecal coliforms, a group of bacteria that include *E.coli*, can survive in freshwater for up to 60 days.

Combined Sewer Overflows in the Lake Champlain Basin



Graphics: Lake Champlain Basin Program

Stay updated on the most recent CSO events contributing pollution to Vermont's waters:
<https://go.uvm.edu/csos>

WHAT IS BURLINGTON DOING?

- In 2021, near the Pine Street combined sewer overflow location, 15 rain gardens and subsurface storage systems were installed to capture and infiltrate stormwater into the ground. These systems remove pollutants carried by stormwater and divert large amounts of runoff from the sewer system.
- As of May 2022, stormwater runoff from 35 acres of paved surfaces in Burlington is captured and managed by green stormwater infrastructure.

ACTIONS YOU CAN TAKE TO KEEP WATER CLEAN:

- Reduce stormwater runoff from your property to minimize the amount of nutrients that reach local waterbodies.
- Clear leaves away from storm drains, as they can leach nutrients into waterways and promote the growth of cyanobacteria.
- Eliminate the use of fertilizer or get a soil test to assess soil conditions and plant needs prior to application. To learn how to test your soil, visit <https://go.uvm.edu/vtsoiltest>.
- Only fertilize your lawn in the fall.
- Reduce areas of bare / eroded soil on your property.
- Reduce impervious surfaces and increase green infrastructure.

Contact us: blue@uvm.edu

Find out what you can do
to be more **BLUE**



The University of Vermont



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Just water
consulting

BLUE BTV is a residential green stormwater infrastructure incentive program in Burlington, VT. BLUE BTV educates and collaborates with residents to identify opportunities for stormwater mitigation, affect behavioral changes, and establish stewardship principles to protect our waters from cyanobacteria blooms.