

## HARTFORD CLIMATE STEWARDSHIP INITIATIVE

*Our website is moving! Find us at [www.hartfordct.gov/sustainability](http://www.hartfordct.gov/sustainability)*

## Let's Be Water Wise! (Updated May 2020)

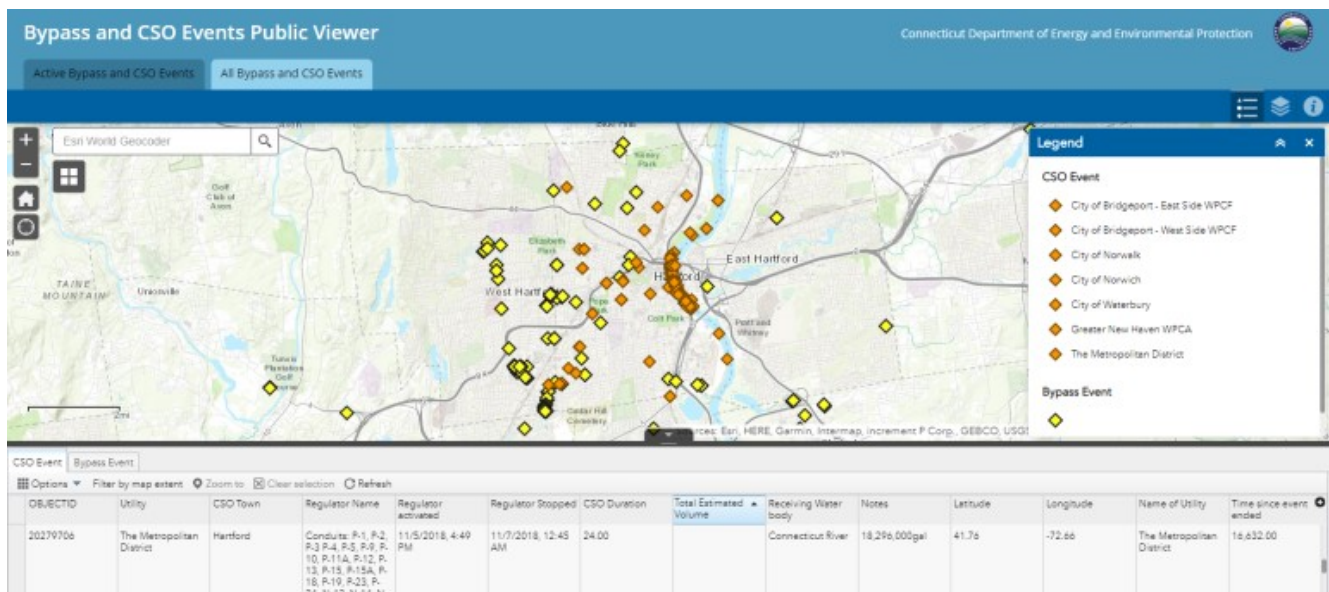
*May 2020 Update: We're back with a final water feature, recognizing the great work that has happened with Retain the Rain.*

As part of our National Fish and Wildlife Foundation Long Island Sound Futures Fund grant, we're working on increasing awareness about the importance of our local waters and the greater Long Island Sound watershed. So you might catch some fun water facts through our [Retain the Rain program](https://hartfordclimate.org/water/retaintherain/) (<https://hartfordclimate.org/water/retaintherain/>), social media (<https://twitter.com/hartfordclimate?lang=en>), and our [newsletter](https://hartford.us15.list-manage.com/subscribe?u=676950f31c2ad5dc564b77b28&id=d18074a634) (<https://hartford.us15.list-manage.com/subscribe?u=676950f31c2ad5dc564b77b28&id=d18074a634>), and we'll keep a running list of our water facts and photos on this page. Looking for events? Check out our [Bright Green Hartford Calendar](https://hartfordclimate.org/brightgreenhartford/#Calendar) (<https://hartfordclimate.org/brightgreenhartford/#Calendar>).

## COMBINED SEWER OVERFLOW REPORTING

In the past, we've talked about [combined sewer overflows \(CSOs\) in Hartford](https://hartfordclimate.org/water/retaintherain/) (<https://hartfordclimate.org/water/retaintherain/>) and related impacts on our local and regional waters like the [Connecticut River and Long Island Sound](https://hartfordclimate.org/2019/05/21/waterwise/). (<https://hartfordclimate.org/2019/05/21/waterwise/>) Although we know the what and why, it's time to share the when, where, and how much. Thanks to the Connecticut Department of Energy and Environmental Protection, a number of the regional wastewater and water utilities are required to report "real-time" CSOs or bypass events. The [Metropolitan District](https://themdc.org/long-term-control-plan-update/) (<https://themdc.org/long-term-control-plan-update/>), which services Hartford and surrounding towns, also submits reports to comply with this requirement. This [Bypass and CSO Public Viewer](https://ctdeep.maps.arcgis.com/apps/MapSeries/index.html?appid=a386eea9cc334192a5fd25134d5afdda) (<https://ctdeep.maps.arcgis.com/apps/MapSeries/index.html?appid=a386eea9cc334192a5fd25134d5afdda>) is available online, making the data more accessible than ever before.

Though this information is still relatively recent (the data does not go back further than a few years), it can help track progress going forward and plan for future interventions. Since July 2018, there have been 147 CSO events in Hartford. In terms of volume, although some of these events are smaller (in the hundreds or thousands of gallons), there have notably been a number of events that exceeded a million gallons. In terms of location, many events fall along the Connecticut River, which also receives CSO volumes both upstream and downstream of Hartford before entering the Long Island Sound. Smaller water bodies including local brooks, the Park River, and both North and South branches of the Park River have also received CSO volumes as well.



Screenshot of Hartford area CSOs reported on the CT DEEP Bypass and CSO Public Viewer. One event was reported to be over 18 million gallons of CSO volume.

As these events can often be triggered by wet weather (like rain), a combination of green and grey infrastructure can help manage the excess stormwater. As an individual, when you have a tree, rain barrel, downspout disconnection, or rain garden at home, you're helping reduce sewer overflows for a cleaner Hartford, Connecticut River, and Long Island Sound. For larger property owners and entities, both green and grey infrastructure can help manage stormwater (required by zoning). Every gallon counts, and we can do it together.

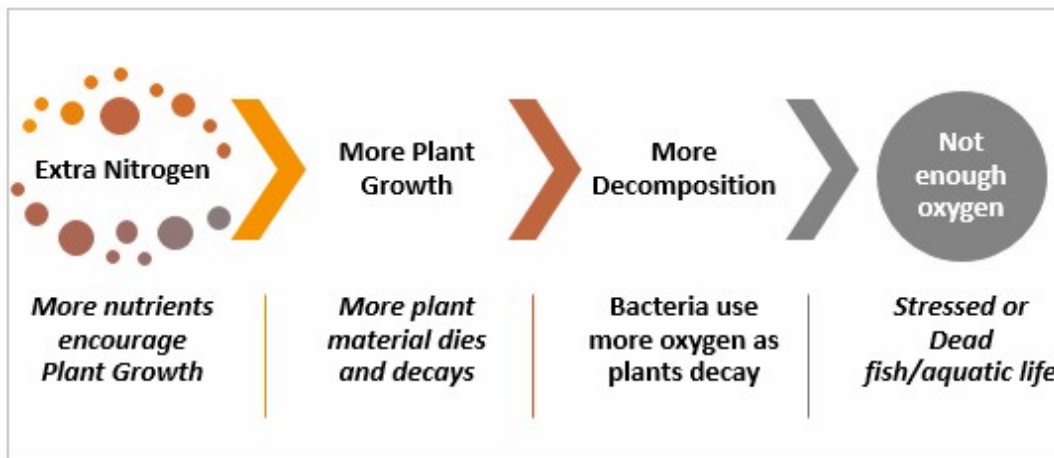
Source: [CT DEEP \(https://ctdeep.maps.arcgis.com/apps/MapSeries/index.html?appid=a386eea9cc334192a5fd25134d5afdda\)](https://ctdeep.maps.arcgis.com/apps/MapSeries/index.html?appid=a386eea9cc334192a5fd25134d5afdda)

*\*The Retain the Rain program is supported by the National Fish and Wildlife Foundation. The Hartford Mayor's Office of Sustainability is funded in part by the National Fish and Wildlife Foundation's Long Island Sound Futures Fund. The views contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Government or the National Fish and Wildlife Foundation and its funding sources. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government, or the National Fish and Wildlife Foundation or its funding sources.*

## Water Quality and hypoxia

In a previous post, we celebrated [World Water Monitoring Day \(https://hartfordclimate.org/2020/09/18/volunteer-water-monitoring/\)](https://hartfordclimate.org/2020/09/18/volunteer-water-monitoring/) and highlighted important resources and volunteer opportunities. Today, let's dive into some of the issues that are monitored to protect the health of our greater Connecticut River and Long Island Sound watersheds.

The Connecticut Department of Energy and Environmental Protection (CT DEEP) is charged with protecting the health of our waters, most notably the Long Island Sound. In the Sound, the state agency conducts water monitoring throughout the year, with a particular focus on hypoxia as it can affect half of the entire Sound every summer. Hypoxia occurs when the water has low or no dissolved oxygen (“DO”) concentrations, and it can be caused or exacerbated by conditions related to nitrogen enrichment and warmer water temperatures. The extra nitrogen can come from “sewage treatment plants, stormwater runoff and atmospheric deposition.” (For more information on stormwater runoff and combined sewage overflows, visit our [water facts \(https://hartfordclimate.org/2019/05/21/waterwise/\)](https://hartfordclimate.org/2019/05/21/waterwise/) or [Retain the Rain \(https://hartfordclimate.org/water/retaintherain/\)](https://hartfordclimate.org/water/retaintherain/) pages.) The excess nitrogen can contribute to the growth of phytoplankton (microscopic plants). When the phytoplankton die, they’re decomposed by bacteria, which use oxygen to break down the plants. These hypoxic areas will have lower oxygen levels and can become “dead zones” that can result in stressed or dead aquatic life. Fish die-offs can also occur in these dead zones.



Extra Nitrogen can encourage plant growth. When those plants die, bacteria will use up oxygen while decomposing the dead plants. Lower oxygen levels can result in stressed or dead aquatic life.

In order to protect the aquatic life and the industries that rely on a healthy ecosystem, it is critical to monitor the water quality of our waters. Monitoring allows us to understand the extent of the issue and track the effectiveness of implemented solutions. CT DEEP and its partners have been monitoring the Sound since 1991, and every year they continue the great work. To see their in-depth reports and annual survey results, you can visit [CT DEEP’s website \(https://portal.ct.gov/DEEP/Water/LIS-Monitoring/LIS-Water-Quality-and-Hypoxia-Monitoring-Program-Overview\)](https://portal.ct.gov/DEEP/Water/LIS-Monitoring/LIS-Water-Quality-and-Hypoxia-Monitoring-Program-Overview). If you’re interested in national hotspot forecasts on dead zones, algal blooms, and more, you can visit [https://oceanservice.noaa.gov/ecoforecasting/ \(https://oceanservice.noaa.gov/ecoforecasting/\)](https://oceanservice.noaa.gov/ecoforecasting/). To help improve water quality in other ways, you can help by reducing stormwater runoff ([Retain the Rain \(https://hartfordclimate.org/water/retaintherain/\)](https://hartfordclimate.org/water/retaintherain/)), volunteering for [water monitoring programs \(https://hartfordclimate.org/2020/09/18/volunteer-water-monitoring/\)](https://hartfordclimate.org/2020/09/18/volunteer-water-monitoring/), and participating in [cleanups \(https://hartfordclimate.org/2020/09/10/september-is-ct-cleanup-time/\)](https://hartfordclimate.org/2020/09/10/september-is-ct-cleanup-time/).

Sources: [CT DEEP \(https://portal.ct.gov/DEEP/Water/LIS-Monitoring/LIS-Water-Quality-and-Hypoxia-Monitoring-Program-Overview\)](https://portal.ct.gov/DEEP/Water/LIS-Monitoring/LIS-Water-Quality-and-Hypoxia-Monitoring-Program-Overview), [NOAA \(https://oceanservice.noaa.gov/hazards/hypoxia/\)](https://oceanservice.noaa.gov/hazards/hypoxia/)

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## September 18 is water monitoring day!

September 18th is World Water Monitoring Day! Take part in the action by joining different water-related activities, from Source to Sea Cleanup Month to volunteer water monitoring programs in Connecticut. Connecticut has numerous waterbodies and waterways throughout the State, with thousands of miles of rivers and streams to hundreds of lakes and ponds and the substantial coastal waters of the Long Island Sound. With such an extensive network of waterbodies, CT Department of Energy and Environmental Protection relies on volunteers and organizations to assist in water quality monitoring efforts.

The information volunteers provide can help detect issues, monitor status, and establish baselines, which are important to maintain the health and integrity of both individual waterbodies and the greater watershed. CT DEEP encourages participants of all skill levels and experience, with different tiers of monitoring available: 1) Basic monitoring using observational data, photographs, and written descriptions; 2) Intermediate monitoring using equipment to log data; and 3) advanced monitoring using expert or professional knowledge to develop more intensive studies, plans or assessments. A sampling of some of the programs available include:

- **Riffle Bioassessment by Volunteers Program:** An annual fall initiative, this program uses the presence of pollution sensitive macroinvertebrates to assess the general health of small streams. About 250 volunteers participated in the 2019 iteration of the program.
- **Volunteer Stream Temperature Monitoring (V-STeM) Network:** Through this program, volunteers use equipment to log stream temperatures year-round or seasonally.

These programs allow participants to become environmental stewards, empowered to engage and care for their local waters and ecosystems. Interested in helping keep our waterways and watershed healthy and clean? Learn more about:

- **CT DEEP's water monitoring programs (<https://portal.ct.gov/DEEP/Water/Inland-Water-Monitoring/Volunteer-Water-Monitoring-Program>)**
- **Water-related Clean Ups (<https://hartfordclimate.org/2020/09/10/september-is-ct-cleanup-time/>)** with Save the Sound and the CT River Conservancy
- **Green Infrastructure (<https://hartfordclimate.org/water/retaintherain/>)\***

If you're interested in learning about more in-depth water monitoring analyses, CT DEEP and its partners also manage year-long sampling and surveying of waters such as the Long Island Sound. These analyses are more technical and advanced than the volunteer monitoring programs; check out CT DEEP's website (<https://portal.ct.gov/DEEP/Water/Inland-Water-Monitoring/Volunteer-Water-Monitoring-Program>) or later posts for more information.

Source: [CT DEEP \(https://portal.ct.gov/DEEP/Water/Inland-Water-Monitoring/Volunteer-Water-Monitoring-Program\)](https://portal.ct.gov/DEEP/Water/Inland-Water-Monitoring/Volunteer-Water-Monitoring-Program)

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## Supporting our URban forest

With recent intense storms taking down numerous trees, it's important to remember the value of our trees and to use thoughtful planning and ongoing maintenance to stay safer and more resilient as a community. Healthy trees = fewer hazards, a cleaner watershed, and a greener, more resilient Connecticut.

## How Hartford's Trees Serve Us

We've previously shared information on how stormwater runoff can cause sewage overflows and other water quality issues for our local waters and the greater Connecticut River and Long Island Sound watersheds, and the role of trees as green infrastructure (learn more on our [Retain the Rain page \(https://hartfordclimate.org/water/retaintherain/\)](https://hartfordclimate.org/water/retaintherain/), [water facts page \(https://hartfordclimate.org/2019/05/21/waterwise/\)](https://hartfordclimate.org/2019/05/21/waterwise/), or [tree page \(https://hartfordclimate.org/landscape/trees/\)](https://hartfordclimate.org/landscape/trees/)). To recap, Hartford's trees provide over \$5 million in annual ecosystem benefits, of which stormwater interception has the greatest value, slowing over 590 million gallons of stormwater every year. Additional co-benefits include air quality improvements (nearly 150,000 lbs of air pollutants removed), and energy savings (3.8 million kWhs saved), carbon storage, and increased property values. A 2019 inventory also reveals that Hartford has upwards of 20,000 trees along its streets and in high use public spaces. In Hartford, other forms of green infrastructure are not as ubiquitous as our urban tree canopy, making it vital to protect and preserve our most extensive and invaluable form of green infrastructure.

## Right Tree, Right Place

Unlike engineered infrastructure, trees can grow and develop far beyond their initial size. It is critical to be thoughtful of long-term growth when planting trees. Planting trees under utility lines or above sewer lines may not have immediate impacts, but could cause issues in the future. Downed trees or broken

limbs could affect power lines, and roots could break into the sewer line, causing leaks and reduced structural integrity. Ultimately, improper planting could result in damage or removal of both the infrastructure and the tree.

As a result, planting the proper tree in the right place is a critical part in maintaining a healthy forest and reducing risk. To site your tree appropriately, follow the guidance of the CT Department of Energy and Environmental Protection's tree resources, which also mention checking for underground utilities with the state's Call Before You Dig service.

## Maintenance and Resiliency

Healthy trees are often more resilient to stressful conditions and are less likely to fail or fall during intense storms. Ongoing maintenance such as pruning and watering during dry spells can help keep trees healthy. Furthermore, preserving our mature trees is essential as they make up the largest portion of our existing canopy and consequently provide the most benefits.

In conclusion, proper planting and ongoing care will ensure that we will have a healthy, lower risk urban forest that keeps our water and air clean far into the future.

Sources: 2014 American Forests Urban Tree Canopy Assessment and Planting Plan, TreeKeeper, CT DEEP, CBYD

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## September is CT Cleanup Time

**CT River Conservancy 2020 Source to Sea Cleanup:** Learn more about volunteering with the CT River Conservancy at <https://www.ctriver.org/our-work/source-to-sea-cleanup/> (<https://www.ctriver.org/our-work/source-to-sea-cleanup/>)

**Save the Sound 2020 Connecticut Cleanup:** Learn more about volunteering with Save the Sound at <https://www.savethesound.org/2020cleanup> (<https://www.savethesound.org/2020cleanup/>)

Did you know that stormwater and combined sewage overflows are among the primary ways that litter is carried through our local waterways to the Long Island Sound? Litter and trash can be harmful to the health of our ecosystems and wildlife, and can be an eyesore, nuisance, or hazard to the people and organizations that enjoy or rely on the Sound. It's important to maintain our local and regional ecosystems and waterbodies, and there are several ways you can help:

- Avoid littering and encourage family, friends, and peers to do the same. To help spread awareness and educate others, share helpful tips, research, and facts about our waters from organizations like the Long Island Sound Study.
- Help clean up by picking up litter, trash, and debris. The Connecticut River Conservancy (<https://www.ctriver.org/category/projects/source-to-sea-cleanup/>) launched their Source to Sea Cleanup Month, and you can participate independently while safely socially distancing. Save the Sound (<https://www.savethesound.org/2020cleanup/>) has also started organized Connecticut Cleanup events for September and October.
- Reduce stormwater inputs and sewer overflows by using green infrastructure. If you participated in Retain the Rain, (<https://hartfordclimate.org/water/retaintherain/>) your trusty rain barrel, downspout elbow/diverter, and tree can help intercept or slow stormwater. These materials can also have additional co-benefits such as water conservation, reduced urban heat island effect (cooling and energy savings) and improved water quality (fewer sewer overflows).

Every action, big or small, counts. So let's keep it green and clean!

Sources: Long Island Sound Study (<http://longislandsoundstudy.net/about/our-mission/management-plan/floatable-debris/>), Connecticut River Conservancy (<https://www.ctriver.org/category/projects/source-to-sea-cleanup/>), Save the Sound (<https://www.savethesound.org/2020cleanup/>)

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