

Stormwater Utilities and MS4 Compliance

Examples from across the country



Stormwater utilities are fees which generate direct and stable funding for stormwater management. Stormwater utilities function the same as other utilities, such as water and sewage. Just as residents pay a fee for how much water they use to fund the drinking water services within their area, stormwater utilities charge residents and property owners on the amount of impervious cover on their property to fund the management needed to prevent and mitigate stormwater pollution and its adverse effects. Impervious cover charges allow for all properties, including those which are tax-exempt, to contribute to the stormwater fund, making for an equitable and fair fee. These funds can be used for various aspects of stormwater management, such as infrastructure repair, green infrastructure implementation, catch basin cleaning, and more, most of which are requirements of the Municipal Separate Storm Sewer Systems (MS4) permit.

The National Pollutant Discharge Elimination System permit, including the MS4 permit, is currently implemented in 46 states across the country.¹ Stormwater utilities have been implemented within 41 states.² And with the passing of Governor Lamont's [Climate Bill](#) in May of 2021, Connecticut municipalities have the opportunity to carry out their own stormwater utilities.³ These utilities are not dependent on geographic area or population size. Locations have ranged from Los Angeles, California, with a population of over 4 million to Indian Creek Village, Florida, with a population of 88 people.⁴ Even though stormwater utilities come in all shapes and sizes, they all address stormwater pollution and help achieve compliance with MS4 requirements.

Stormwater Utilities 2021

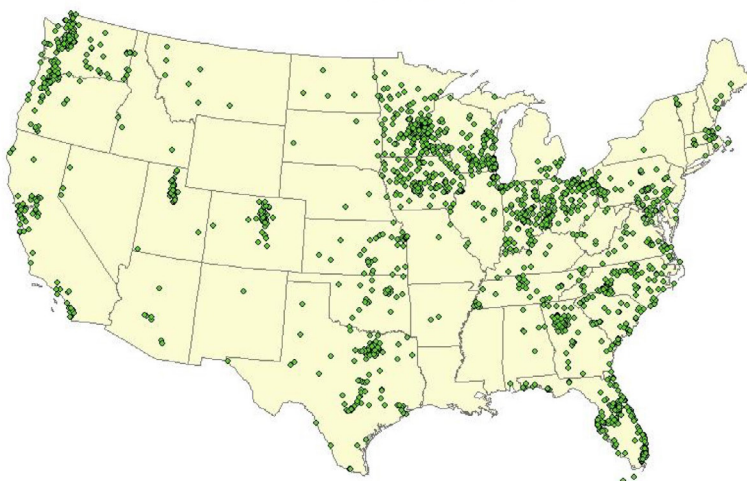


Figure 1: Map of the United States with location of known stormwater utilities, 2021⁵

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Public Education / Involvement

Implementing a stormwater utility requires educating residents and property owners affected about both stormwater pollution and why a stormwater utility may be a beneficial investment. Having a diverse task force involved in the process of establishing a stormwater utility can ensure proper representation to create a utility that benefits everyone. Both aspects cover the first two minimum control measures of the MS4 permit for public education and involvement.

[Cloquet, Minnesota](#) created a pamphlet for its residents to help explain the threats posed by stormwater pollution, what a stormwater utility is, and how it will impact the community.⁶ This keeps residents informed about both the utility process and importance of stormwater runoff.

[Portland, Maine's](#) task force stands as a great example of community involvement, helping to implement the city's utility in 2016. Meeting from 2011 to 2012, the group collaborated on the best way to enact a fair and equitable stormwater utility, which they then presented to the City Council. The task force was made up of business representatives, neighborhood representatives, both taxed and tax-exempt property owners, members of the State Dept. of Transportation, workers from facilities registered under wastewater discharge permits, and more.⁷

Illicit Discharge Detection and Elimination

The Illicit Discharge Detection and Elimination (IDDE) section can be one of the more intimidating requirements of the MS4 permit. However, funding from a stormwater utility can help ease the burden. It can be used for GIS mapping of storm systems, locating and removing illicit discharges, and assist in the monitoring of catchments and manholes.

The stormwater utility in [South Burlington, Vermont](#), dedicates a portion of its funding towards compliance for IDDE. For example, in 2006, the city discovered a sanitary sewer pipe, which had been accidentally connected to the stormwater drainage pipes, discharging directly into local waterways since 1994. Funding was used to dig up and reconnect the pipe to the correct system. At the same time, they were able to conduct further investigation to ensure no other nearby illicit connections were present. Since then, monitoring results have shown a reduction in pollutant levels at this outfall.⁸

Construction Site Stormwater Runoff

Stormwater utility funding can even be put towards the construction site control measure of the MS4 permit. This measure focuses on implementing legal authorities to control stormwater runoff on development and redevelopment sites. Funding can be used towards bringing on legal consultants to assist with establishing an ordinance or conduct inspections, just as the small town of [Millis, Massachusetts](#) did. With a population of just over 8,000, this town has been collecting funds since 2018 to assist in their "inspection and enforcement of stormwater bylaws at construction sites" along with many other aspects of their MS4 permit.⁹

Post-Construction Stormwater Management



Figure 2: The before results of the bioretention area in Raleigh, NC.¹⁴



Figure 3: The after results of the bioretention area in Raleigh, NC.¹⁵

Within the fifth minimum control measure, Post-Construction Stormwater Management, is the requirement that directly connected impervious areas (DCIA) must be disconnected and reduced by 2% by July of 2022, with a 1% reduction continued annually after that.¹⁰ This requirement can be quite a challenge, however a stormwater utility can generate funds for disconnection, green infrastructure implementation, and incentivize residents to disconnect any DCIA on their properties as well.

In [Raleigh, North Carolina](#), the funds collected from their stormwater utility has led to a massive green infrastructure push. In the Fall of 2021, the city constructed a 1,700 sq. ft. bioretention area to collect and absorb surrounding stormwater runoff. The six trees and more than 750 plants spread throughout the bioretention area are expected to keep six pounds of nitrogen and 109 pounds of suspended solids from entering waterways every year.¹¹

On top of the direct use of funding, stormwater utilities can be a great way to incentivize homeowners and private property owners to participate in DCIA disconnection. Because the utility fee is based on the amount of impervious cover on a property, residents could have the opportunity to reduce their fee by reducing their total impervious cover. This can be done with a credit or discount system.

[Portland, Oregon](#) offers stormwater credits for all property types - industrial, commercial, multi-family, single-family, and more. For residential properties, residents can receive fee discounts of up to 100% for properly managing rooftop stormwater runoff. The city provided examples of simple green infrastructure homeowners can use to disconnect rooftop DCIA, such as dry wells and french drains, lawns and rain gardens, rain barrels, and eco-roofs.¹² By offering these discounts, residents may be more likely to disconnect their own homes, adding to the total percentage of disconnected DCIA towns need each year to be compliant with the permit.

Stormwater utilities have also been able to provide funds for the required long-term maintenance of detention ponds and basins. [Fort Collins, Colorado](#), which has been battling destructive flooding for decades, has been able to inspect, maintain, and improve their detention basins to greatly reduce flood risk for surrounding homes. From 2007 to 2012, the city addressed conditions at various detention basins and improved local street drainage in areas which had seen disastrous flooding a decade prior. The entire project was completed under budget using the stormwater utility funds and was awarded the American Public Works Association Colorado Chapter annual award as the top Drainage and Flood Control Project in a Large Community.¹³

Pollution Prevention and Good Housekeeping

Minimum control measure 6, Good Housekeeping and Pollution Prevention, contains the most requirements of all the measures. Examples include catch basin cleaning, street sweeping, maintenance upkeep, and repair of infrastructure, all of which can be difficult to complete if you're competing with other projects for money from a general fund.

Often, the most reported concern of residents is aging infrastructure. In a [2021 stormwater utility survey](#), 73% of respondents reported that aging infrastructure was one of the two highest ranked stormwater management issues.¹⁶ Having funds on hand to address this concern has benefits for both the town and residents. Up to date infrastructure means a lower potential for flooding and illicit discharges and puts residents at ease seeing their money directly benefiting them and the town they live in.

[Augusta, Georgia](#) has been plagued with aging infrastructure and excessive flooding. While its rich history adds to the value of the city, the out-of-date drainage system has led to both physical and economic setbacks. With an estimated \$240 million backlog of stormwater infrastructure repairs, the city desperately needed a more direct way to fund the imperative upgrades. Previously, stormwater funding had been gathered from a combination of a general fund and a Special Purpose Local Options Sales Tax fund. Because the funding source was unreliable and had to be shared amongst other projects, the city could only afford six stormwater crews to man the various jobs required to improve drainage and stay in compliance with the MS4 permit. With the implementation of a stormwater utility in 2016, Augusta generated separate stormwater funds to be put towards doubling the amount of stormwater crews, rehab and repair of stormwater infrastructure, street sweeping, and catch basin cleaning to prevent flooding incidents. The city has already created a plan to take on 13 new priority projects addressing drainage improvements and flood hazard mitigation.¹⁷

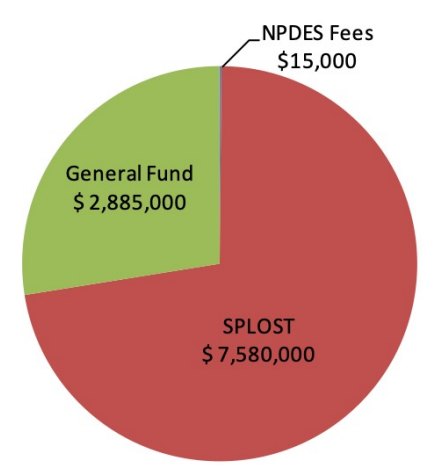


Figure 4: Funding blend prior to stormwater utility in Augusta, GA.¹⁸

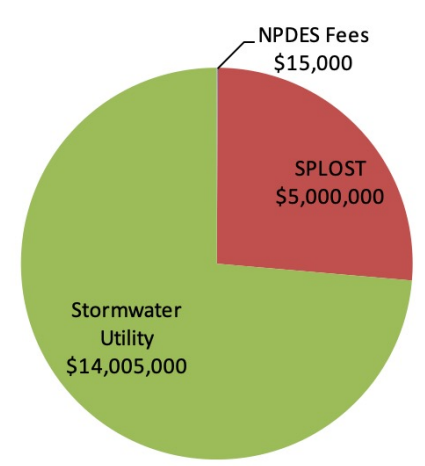


Figure 5: Funding blend with stormwater utility in Augusta, GA.¹⁹

Water Quality Monitoring

Connecticut's MS4 permit puts an emphasis on water monitoring, both for impaired waters and illicit discharges. Funding raised by the utility can be put towards testing kits, laboratory tests, staff increases, and training to ensure properly monitored waters and improve water quality.

The [City of Bellingham, Washington](#) took measures to address the excess phosphorous and bacteria entering the nearby Lake Whatcom. Their stormwater utility assisted in the planting of native vegetation and phosphorous-removing filter cartridges within nearby drainage areas help improve the water quality of the lake and meet their Total Maximum Daily Load (TMDL) standard.²⁰

Taking it a step further, the [county of Whatcom, WA](#) established their own stormwater utility fee for properties which drain into Lake Whatcom and are outside of the Bellingham area. Their utility provides \$45,000 annually to go directly towards the monitoring of Lake Whatcom to assist in meeting the TMDL.²¹ Both Bellingham and Whatcom County area great examples of how stormwater utilities can generate funding sources for monitoring and improve local water quality.

Rain Garden. Image. American Rivers. <https://www.americanrivers.org/threats-solutions/clean-water/stormwater-runoff/>.

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