

Stormwater Utilities

A Funding Solution for New Jersey's Stormwater Problems

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Statement of Purpose

This report seeks to provide an introduction to and description of stormwater utilities as a tool to manage stormwater in New Jersey more effectively. Stormwater utilities provide a mechanism for raising funds dedicated to stormwater management and create the opportunity for a number of implementation activities, including the construction, operation, and maintenance of stormwater infrastructure, and the development of related water quality programs and public education. This paper provides examples of prevalent stormwater management practices, operations, and finance systems, based on reviews of stormwater management from around the country. The role of the state government to authorize the local creation of stormwater utilities is also discussed.

About the Author

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The Impacts of Ignoring Stormwater

New Jersey faces an extensive and expensive set of problems because of inadequate stormwater management. When storms occur, rainwater can either soak back into the ground or run off of **impervious surfaces**, like roads, roofs, and parking lots, into stormwater sewer systems and ditches or directly into waterways. When water runs off of streets, buildings, or yards, it can

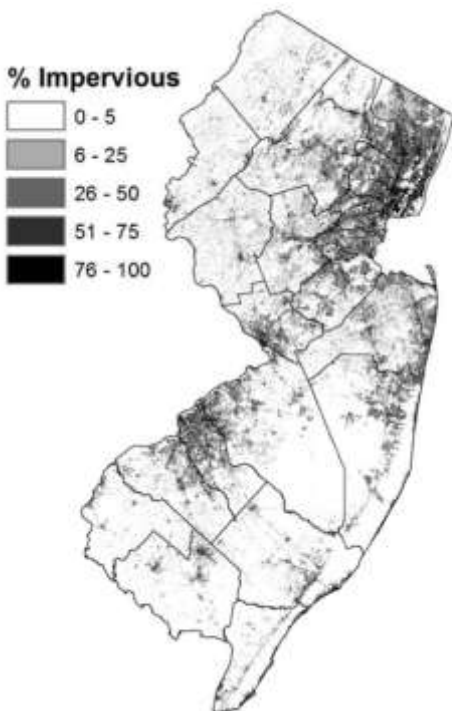


Figure 1. Impervious surface covered 10 percent of New Jersey's land area in 2002. (Source: "Integrating Impervious Surface Management and Smart Growth Development in New Jersey.")

carry with it dirt, debris, bacteria, and chemicals like pesticides, fertilizers, and gasoline that can pollute lakes, streams, wetlands or the ocean. Runoff in large volume and force, when there is no open space or constructed stormwater management infrastructure to help absorb and capture the water, can result in major flooding and property damage.

With such a large percentage of impervious surface, New Jersey in particular faces serious water pollution and flooding issues. According to a Rowan University report, as of 2002 New Jersey's impervious surface made up 490,000 acres or 10 percent of the state's land area.¹

While **gray infrastructure**, or the traditional engineered solutions such as storm drains, pipes, and outfalls, is designed to collect and transfer runoff, sometimes that infrastructure fails. Unlike wastewater and drinking water infrastructure,

which are paid for by water rates, stormwater conveyances systems in New Jersey lack a dedicated funding source and receive few upgrades and little maintenance once built.² Since this infrastructure is durable, the systems often go unmonitored and unattended until they break down due to age or erosion. In some cases, the infrastructure is simply inadequate to manage stormwater, especially as increased development and large storm events generate more runoff.

¹ Hasse and Dornisch, *Integrating Impervious Surface Management and Smart Growth Development in New Jersey*, 11. This report assesses that impacts on chemical balances (including pH, chloride, sulfate, and nitrogen) and vegetation and animal health become measurable at impervious cover proportions as low as 10%.

² Van Abs, *Water Resources Baseline Assessment Report*, 17.

closed businesses, property damage, sewage overflows, and a resulting decline in living conditions. Especially concerning for New Jersey's vast urban population is the Federal Emergency Management Agency's (FEMA) estimate that nationwide up to 25 percent of economic losses from flooding result from urban drainage. These problems can affect the ecological, health, and economic aspects of citizens' daily lives.

New Jersey's 21 cities that have combined sewer systems (CSSs) experience greater difficulty in handling their stormwater. Combined sewer systems have underground conveyance that carries both sewage and stormwater in the same pipe to treatment facilities. When there is too much sewage and stormwater to process, untreated pollutants overflow into waterways causing combined system overflows (CSOs). Sewage may also backup into streets, near homes, and in waterways that supply

drinking water, creating a health threat for the community. Many CSSs have underground water infrastructure well past their useful lives, some over 100 years old.³ The U.S. Environmental Protection Agency (USEPA) estimates that fixing CSOs could cost New Jersey \$9.3 billion.⁴

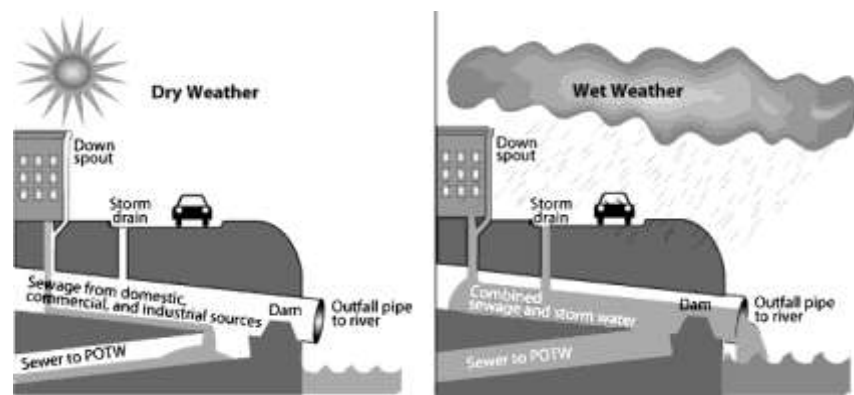


Figure 2. 21 New Jersey cities have combined sewer overflows where rainwater mixes with sewage and flows into waterways. (Source: USEPA.)

Stormwater management problems span urban, suburban, and rural municipalities, above and below ground. In 2008, the USEPA ranked stormwater management as New Jersey's most expensive water-related funding need.⁵ To meet stormwater management compliance requirements under the Clean Water Act, the USEPA estimates that New Jersey will need to spend \$15.6 billion.⁶ While the USEPA's Clean Water Act and New Jersey Department of Environmental Protection (NJDEP) have adopted regulations requiring municipalities to manage stormwater, many towns lack resources and often choose to divert money and staff power to more urgent concerns.⁷

³ Van Abs, *Water Infrastructure in New Jersey's CSO Cities*, 1.

⁴ *Facing Our Future: Infrastructure Investments Necessary for Economic Success*, 34.

⁵ *Clean Watersheds Needs Survey 2008 Report to Congress*, 2-18.

⁶ *Ibid.*, vii.

⁷ Peifer, "Is It Time for Stormwater Utilities?," 23.

The Current State of Stormwater Management in New Jersey

Under the Clean Water Act and related state statutes and regulations, municipalities are mandated to install controls to prevent pollutants in stormwater runoff from entering local waterways. Stormwater management seeks to reduce, control, and prevent rainwater runoff through a variety of strategies intended to induce or control infiltration of water and associated pollutants into the soil. If rainwater cannot infiltrate into the soil fast enough or there is a lot of impervious surface, runoff is produced that can lead to flooding. NJDEP regulations also require municipalities to create and carry out a stormwater management plan that reduces flooding damage, minimizes runoff, and decreases pollutants in rainwater runoff, among other things.⁸ Municipalities must review the stormwater management components of new development and redevelopment projects.

The practice of stormwater management in New Jersey has evolved progressively over the years. Originally, stormwater management took on the simple task of moving water away from developed areas to prevent flooding. This approach relied on stormwater sewer conveyance systems, typically ditches and underground pipes, to relocate the rainwater to waterways. In the 1980s, as more development occurred (with a corresponding increase in impervious surfaces),

Stormwater Management seeks to reduce, control, and prevent rainwater runoff through a variety of strategies intended to induce or control infiltration of water into the soil and associated pollutants.

and as New Jersey adopted its Stormwater Management Rules (1983, N.J.A.C. 7:8), stormwater management in new developments in the state began to rely upon detention basins.⁹ Detention basins are designed to hold stormwater during a rain event and then release it slowly through a concrete low-flow channel and outlet structure, often into an adjacent water body.¹⁰

In 2004, the NJDEP adopted updated stormwater management regulations that established more stringent controls on stormwater quality and quantity generated by new development and redevelopment. The rules included four new requirements: 1) control of water quantity either by reducing by specified percentages the peak runoff flow rates leaving a site after development, or by matching the pre-development volume of water runoff; 2) groundwater recharge¹¹ to mitigate deficits caused by development; 3) protection of water quality by requiring a certain percent of pollutant removal and filtering before stormwater flows downstream or into groundwater;¹² and 4) use of nonstructural strategies for site design relying on Best Management Practices (BMPs) that can reduce downstream impacts on stormwater quality and quantity.

⁸ *Municipal Stormwater Regulation Program*, 1.

⁹ Friedlich, Stormwater Management in New Jersey Interview.

¹⁰ *New Jersey Stormwater Best Management Practices Manual*, 1-2.

¹¹ *Ibid.*

¹² Friedlich, Stormwater Management in New Jersey.

Stormwater management practices in New Jersey have responded to the 2004 regulatory requirements. Many new development and redevelopment projects are beginning to utilize Low Impact Development (LID) practices to design sites to handle stormwater similar to the way they did before development.¹³ LID typically involves careful site planning and decentralization of stormwater management techniques throughout the site.¹⁴ For example, instead of installing a central stormwater detention basin, the developer may minimize site disturbance through preserving important natural features such as native vegetation; reducing impervious cover; and minimizing turf grass lawns where water does not infiltrate as deeply.¹⁵ Decentralized stormwater BMPs, such as porous pavement that allows water to soak through and bioretention basins where stormwater collects in a treatment area that naturally filters out contaminants and sedimentation, are more common in LID designs. Once stormwater infrastructure is installed, homeowners' associations typically have responsibility over managing it; less frequently they may transfer that responsibility to the local government.

Stormwater management is an ever-expanding subject with new practices, technologies, processes, programs, and methods to handle runoff. There is a growing shift towards strategies that use natural processes. One increasingly popular strategy for both new and existing development is the use of **green infrastructure**. Green infrastructure uses vegetation, soils, and natural processes in areas with impervious surfaces to allow for more stormwater to be absorbed into the ground instead of being piped into streams through gray infrastructure.¹⁶ Many of the best management practices for stormwater now focus on finding new ways to utilize green technology, such as vegetated roofs and walls, rain gardens and pervious pavements, and promoting groundwater recharge.

Outside of developments where homeowners' associations or property owners hold responsibility for stormwater management, municipalities are generally responsible for managing stormwater. Operationally, local governments – typically the local public works or sewer department staff – are responsible for operating and maintaining such publicly-owned stormwater infrastructure as drainage systems for local roadways, stormwater basins, underground conveyance systems and stormwater inlets and outlets. State and local government transportation agencies also install and maintain stormwater infrastructure that serves roads and bridges under their jurisdiction.¹⁷ Municipalities also typically conduct street sweeping and sometimes run anti-pollution awareness campaigns to help improve the quality of runoff before it enters the storm sewer system.¹⁸

¹³ *New Jersey Stormwater Best Management Practices Manual*.

¹⁴ Friedlich, Stormwater Management in New Jersey Interview.

¹⁵ *Ibid*, 2-1.

¹⁶ *The Economic Benefits of Green Infrastructure*.

¹⁷ Cesanek, Current State of Stormwater Management in New Jersey.

¹⁸ Friedlich, Stormwater Management in New Jersey.

But unlike sewer and drinking water systems, where repairs and treatment are funded directly by user fees, stormwater management systems in New Jersey lacks a consistent, dedicated funding source. Despite a complex network of stormwater management systems, local governments often do not maintain records of the location and condition of stormwater infrastructure. Within the local public works or sewer department, ongoing stormwater maintenance and operations compete for funds and staff power with other priorities. Inconsistent funding makes it hard to plan for long-term stormwater infrastructure repairs and improvements.¹⁹ The generally durable nature of stormwater infrastructure often means maintenance and repairs are deferred year after year.²⁰ When faced with a largely unseen and expensive maintenance project that will require large quantities of taxpayer money, local officials often choose to put it off.²¹

Stormwater Utilities

In over 1,400 municipalities nationwide, local governments have begun to use **stormwater utilities** as a way to assign responsibility for repairs, develop asset management plans, and set up a stable financial support system.²² A stormwater utility, like a water and sewer utility, is an assessment district established to collect funds specifically for stormwater management.²³ A customer's rate is usually determined based on the customer's contributions of stormwater runoff into the infrastructure system, and may go directly towards a stormwater utility's infrastructure maintenance and upgrades, plan development and control measures, and water-quality programs.²⁴

Although defined as a "stormwater utility," the entity that uses the stormwater management fee does not have to run as a separate utility and is frequently given to a city's public works or water department to manage. From Oregon to Ohio to Florida, 41 states allow their municipalities and counties to decide if a stormwater utility fits their needs.²⁵ Within those governing bodies, 82 percent of the utilities reported jurisdiction over only one city, with 9 percent supporting a county and 3 percent having regional authority.²⁶ Municipalities with stormwater utilities vary in size and location. Interestingly, the states with the highest number of stormwater utilities are those with younger development, such as Washington, Texas, Florida, Wisconsin, Ohio, and

¹⁹ Peifer, "Is It Time for Stormwater Utilities?," 23.

²⁰ Peifer, "Is It Time for Stormwater Utilities?," 23.

²¹ Cesanek, Current State of Stormwater Management in New Jersey.

²² Kaspersen, "The Stormwater Utility: Will It Work in Your Community?"

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ *2012 Stormwater Utility Survey*, 3.

²⁶ *Ibid.*, 7.

Minnesota.²⁷ Stormwater utilities can provide municipalities with the resources necessary to responsibly maintain and manage existing systems.



Figure 3. Number of stormwater utilities by state. Blue designates those states with more than 100 and red indicates those with no stormwater utilities. Despite have younger development than New Jersey, Minnesota, Florida, and Wisconsin are the leaders in implementing stormwater utilities. (Source: “Stormwater Utility Survey 2011,” Western Kentucky University.)

New Jersey law does not explicitly authorize local governments or utilities to create stormwater utilities. Some New Jersey CSO cities are exploring ways in which they may be able to establish stormwater fees legally. Their position centers on the argument that municipalities and utilities should be able to charge for the control or treatment of stormwater because technically it becomes sewage once it enters a combined system. While existing statutes on sewer rates apparently allow CSO municipalities to charge for stormwater contributions to combined sewers, other municipalities lack clear authorization to charge for stormwater management. Historically, New Jersey’s attempts to enable stormwater utilities have been thwarted due to concerns about the creation of a new fee on residents and businesses. In 2010, Governor Chris Christie vetoed a bill that would have set up a stormwater management utility pilot project to protect Barnegat Bay and require the NJDEP to create a stormwater utility guidance manual.²⁸ In 2012, a bill to grant municipalities, counties, and county utility authorities the power to establish stormwater utilities for areas served by combined sewer systems passed the Assembly, but was stalled in the Senate

²⁷ Campbell, *Stormwater Utility Survey 2013*, 3.

²⁸ The struggle to pass these bills authorizing a stormwater utility likely comes from concerns that the new fee may become an added tax burden. Peifer, “Is It Time for Stormwater Utilities?”

Budget and Appropriations Committee.²⁹ These legislative attempts have continued, albeit unsuccessfully.³⁰

²⁹ "Bills 2012-2013: A2641."

³⁰ Bates, "NJ Has No Stormwater Utilities Post-Sandy."

Characteristics and Choices for Stormwater Utilities

This section surveys the common characteristics of stormwater utilities in place around the country, based primarily on two comprehensive national surveys: the Black and Veatch Consulting *2012 Stormwater Utility Survey* and Western Kentucky University's *Stormwater Utility Survey 2013*.

Stormwater utilities have various options for who administers the stormwater utility program. According to Black and Veatch, 46 percent of the surveyed municipalities have a stand-alone stormwater utility; 21 percent added stormwater management to the applicable water and wastewater utility; and 28 percent combined the utility with the local department of public works.³¹ After responsibility is assigned, there are many options for which operations to conduct, which technologies to use, what plans to develop, and how to oversee existing systems.

System Evaluations. The structure and character of a stormwater utility depend upon the different needs of each community, which include the state of the existing stormwater system. Understanding the location, age and type of stormwater infrastructure is essential to the effective ongoing operation and maintenance of the comprehensive system.

Master Plans. Around the country, 84 percent of stormwater utilities surveyed reported having developed stormwater master plans, and 19 percent reported having long-term control plans.³² Other plans developed by stormwater utilities include integrated wet weather management plans to meet state and federal regulations for stormwater management, and integrated water resource plans. With its system evaluation made, a utility can develop plans that ensure proper design for stormwater collection and treatment within new development projects.³³

USEPA Stormwater Utility Resources

The USEPA provides a wide variety of resources to help assist municipalities in establishing and managing a stormwater utility:

- [*National Menu of Stormwater Best Management Practices*](#) – online database of all tools related to Public Education, Public Involvement, Illicit Discharge, Construction, Post-Construction, and Good Housekeeping.
- [*Integrated Planning Technical Assistance*](#) – technical support offered to communities looking to develop and implement an integrated approach to meeting Clean Water Act requirements.
- [*Resource Guide to Effective Utility Management and Lean: Improving Performance and Addressing Key Management Priorities at Water-Sector Utilities*](#) – report available online for water-sector utilities looking to implement better management and risk assessment practices
- [*Stormwater Utility Case Studies*](#) – online reports that assess the application of stormwater utilities in such communities as Philadelphia, PA; Lancaster, PA and Hillsboro, OR.

³¹ *2012 Stormwater Utility Survey*, 7.

³² *2012 Stormwater Utility Survey*.

³³ "STORMWATER 101."

Above-Ground Equipment Maintenance. A stormwater utility can finance the more visible aspects of stormwater management. The utility would take over responsibility for such maintenance as cleaning stormwater inlets, outlets, ponds, and retention basins used to collect water runoff.³⁴ Black and Veatch report that 91 percent of CSSs and 98 percent of separate storm sewer system utilities budget for inlet and outlet maintenance.³⁵

Above-Ground Pollution Prevention. Fifty-five percent of CSSs and 82 percent of separate storm sewer system utilities finance street sweeping that helps prevent pollutants from entering the system when it rains.³⁶ The utility can oversee the construction of stormwater runoff and collection systems in development projects to help prevent erosion.³⁷ In cases of emergency chemical spills or flooding, the stormwater utility can finance and create an emergency response team to prevent pollution of area waterways.³⁸ Public alerts keep citizens informed on the direct impact of their actions. Other pollution prevention activities engaged in by utilities include illegal-discharge detection to stop hazardous spills and dumping; construction of detention and retention basins, which collect water and release it slowly, and of constructed wetlands to restore the native habitat and create a biofilter to remove pollutants; and control of lawn herbicides and pesticides as a way to limit the chemicals in stormwater runoff.³⁹ A stormwater utility can also take responsibility for water sampling of creeks and pollution surveys to identify and address sources of pollution.⁴⁰ Financing pollution prevention can help to decrease the costs of treatment once the water has entered the stormwater system.

Public Pollution Alerts. Stormwater utilities can communicate with the public on the current status for pollutants entering the local waterways, which helps to prevent further pollution. Philadelphia uses its stormwater revenues to produce the Philly RiverCast, a daily forecast of the Schuylkill River water quality for recreational activities,⁴¹ and CSOCast that alerts the public to combined sewer overflows.⁴²

Green Infrastructure. Maintaining and monitoring current assets also presents the opportunity to promote innovations in stormwater management. Green infrastructure uses vegetation, soils, and natural processes to capture stormwater where it falls, before it can enter the gray-infrastructure pipe system.⁴³ Since green infrastructure increases vegetation and allows for more

³⁴ Ibid.

³⁵ Inlets and outlets are the gray infrastructure drains in which the stormwater enters and exits. *2012 Stormwater Utility Survey*, 13.

³⁶ Ibid.

³⁷ "STORMWATER 101."

³⁸ Ibid.

³⁹ *2012 Stormwater Utility Survey*, 9.

⁴⁰ "STORMWATER 101."

⁴¹ "Philadelphia Water Department Philly RiverCast."

⁴² "Philadelphia Water Department CSOcast."

⁴³ *The Economic Benefits of Green Infrastructure*.

Green Infrastructure Incentives

According to Black and Veatch, 37.3 percent of utilities surveyed have a credit program for those properties that either reduce demand on the stormwater system and/or reduce the utility's cost of service through green infrastructure. As a way to promote on-site stormwater management, many stormwater utilities give a rebate for the instillation of certain green infrastructure techniques that help reduce impervious surface and absorb or store water on-site. Seventy-two percent of those programs that offer credits place a cap on the total amount that can be offered.

Green infrastructure techniques that receive fee credits or rebates include:

- Rain barrels
- Green roofs
- Rain gardens
- Porous pavers.

planted areas, greater flood protection, cleaner air and cleaner water, it is especially useful in an urban setting with large quantities of impervious pavement.⁴⁴ Green infrastructure can be created directly by stormwater utilities or by private property owners. Many cities offer property owners reductions in stormwater utility fees in return for the instillation of green infrastructure.⁴⁵

Meeting Permit Requirements. Some municipalities, such as Lancaster, Pa., are establishing new approaches to the USEPA mandated permit requirements system by using integrated strategic plans.⁴⁶ Most municipalities, instead of creating a comprehensive plan that addresses multiple permit requirements, choose to act only on individual requirements.⁴⁷ This has proven to be inefficient since permits have overlapping requirements that can be addressed more efficiently together.⁴⁸

Developing an integrated and tactical planning approach can serve as a holistic way to help bring states up to date and in compliance with existing nationwide standards. A stormwater utility can help provide the funding and management needed to fulfill the purpose of the permit system through holistically improving the community's treatment and use of stormwater.

Asset Management, Financing, and Billing

Asset Management. The implementation of a stormwater utility encourages asset management, which uses strategies to preserve and extend the service life of long-term gray and green infrastructure. Implementing asset management involves conducting a comprehensive assessment to map the physical location and condition of all assets in a system, and to identify the most critical assets, which then facilitates more effective planning and prioritizing of capital renewal and investments. The USEPA has defined a framework for stormwater asset management through its Best Management Practices (BMP), which outline technologies, and its

⁴⁴ Ibid.

⁴⁵ "EPA Funding Stormwater."

⁴⁶ *2012 Stormwater Utility Survey*, 8.

⁴⁷ *Ibid.*

⁴⁸ *Ibid.*

Effective Utility Management (EUM) guide, which describes strategies to monitor and maintain assets.⁴⁹ The stormwater BMP are a list of techniques promoted by the USEPA to design, implement, and evaluate stormwater management efforts.⁵⁰ Municipal utilities like Hillsboro, Oregon, use both the BMP and EUM guide for their stormwater utility.⁵¹ Although the EUM guide was designed for water and wastewater systems, it promotes Total Water Management that easily can include stormwater management.⁵²

Fee Systems. Ninety-one percent of surveyed stormwater utilities reported that over 75 percent of their revenues come from stormwater user fees, with the rest of the financing from bonds or taxes.⁵³ Fee systems come with a variety of options. A few utilities base charges on a property's water usage according to the water meter.⁵⁴ This system is best for those utilities that use the fee primarily to support water quality improvement.⁵⁵ Other stormwater utilities, however, choose either to charge a flat rate for residents or base the fee on property specifics.⁵⁶ There are three main rate structures for single-family residential parcels:

- **Uniform flat fee.** Used by about 55 percent of surveyed stormwater utilities, this system is a simple way to offer the same rate to all homes despite the quantity of impervious surface on the property.⁵⁷
- **Individually calculated.** Calculated using the *Residential Equivalent Factor (REF)* technique, this system represents 18 percent of utilities surveyed.⁵⁸ A REF measures the amount of runoff from different land uses.⁵⁹ Although a fair system, the calculations can be complicated because charges are based on the average runoff from similar parcels of a given size.⁶⁰
- **Tiered rates.** This fee structure uses various pricing ranges, or tiers, based on the extent of impervious coverage present.⁶¹ Thirty percent of surveyed utilities use this fee system.⁶²

Ultimately, it is up to the utility to decide which system matches the needs of the municipality.

⁴⁹ "Effective and Sustainable Water Utility Management."

⁵⁰ "Stormwater Management Best Practices."

⁵¹ Taniguchi-Dennis, Diane, "Leveraging Utility Performance with Effective Utility Management and Lean/Six Sigma, Presentation by Clean Water Services."

⁵² *Ibid.*

⁵³ *2012 Stormwater Utility Survey*, 11.

⁵⁴ Cesanek, Current State of Stormwater Management in New Jersey.

⁵⁵ Campbell, *Stormwater Utility Survey 2013*, 9.

⁵⁶ *Ibid.*

⁵⁷ *2012 Stormwater Utility Survey*, 13.

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*, 5.

⁶⁰ *Ibid.*

⁶¹ *Ibid.*

⁶² *Ibid.*

Billing. There is a variety of options for how to collect a stormwater utility fee. Nationwide, the average monthly single-family residential fee in 2013 was \$4.57.⁶³ Who is billed also varies across stormwater utilities. Sixteen percent of utilities charge each resident, while 73 percent charge the property owner or landlord.⁶⁴ The fee can be included with tax bills, included with water and sewer bills, or billed via a separate stormwater bill.⁶⁵ About 61 percent of stormwater utilities bill on a monthly basis; others bill annually, quarterly, bimonthly, or semiannually.⁶⁶ The fee may come with discount options for low-income, elderly, disabled residents, or if the property is an educational institution, although 76 percent do not offer discounts.⁶⁷ Many cities, including Philadelphia, offer a credit or reduced fee for properties that install green infrastructure.⁶⁸ This incentivizes property owners to manage stormwater on-site by installing rain barrels, planters, rain gardens, green roofs, and various other infiltration techniques.⁶⁹

Advancing Stormwater Utilities in New Jersey

State Authorization. With the possible exception of New Jersey's CSO municipalities,⁷⁰ legislative authorization by the state would provide municipalities with the ability to create a stormwater utility. Current legislation, such as The Stormwater Management Act, should be clarified and extended in order to grant municipalities, groups of municipalities, counties, or regional government agencies the authority to develop and implement a stormwater utility if they so choose.⁷¹ General government and utility authority powers should provide provisions for stormwater utility functions under existing water, wastewater, and flood control laws.⁷² Once powers are clarified legislatively, state agencies such as the NJDEP, should look to provide guidance for successful implementation of stormwater utilities at the local level.⁷³ Already, the USEPA provides best-practice methods that can be analyzed further to determine which will work best for New Jersey.⁷⁴ Without this step at the state government level, local governments may not have the option of providing proper stormwater management to their local communities.

⁶³ *Ibid.*, 2.

⁶⁴ *2012 Stormwater Utility Survey*, 16.

⁶⁵ *Ibid.*, 15.

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

⁶⁸ *Promoting Green Infrastructure*, 2.

⁶⁹ *Homeowners Guide Stormwater Management*.

⁷⁰ As mentioned previously on page 8, while New Jersey law does not explicitly authorize local governments or utilities to create stormwater utilities, some CSO cities are exploring whether or not existing regulations would permit them to legally establish stormwater fees.

⁷¹ Cesanek, *Recommendations for Stormwater Utility Implementation in New Jersey*, 1, 5, 6.

⁷² *Ibid.*

⁷³ *Ibid.*

⁷⁴ "Stormwater Management Best Practices."

With legislation passed, the municipalities and regional entities will have the option whether to create, oversee, and regulate the stormwater utility. If a watershed spans multiple municipalities seeking to implement a new utility, creating a regional utility, or creating a special assessment district that charges only those who affect the watershed, may work best.⁷⁵ It may be simplest in many areas for the pre-existing water and sewer utilities to expand to include stormwater management.

Building Support through Education at the Local Level. Educating the public remains one of the most important tasks in gaining community support for a new stormwater utility. Public education on the needs and benefits of stormwater management is also considered one of the greatest challenges current stormwater utilities face.⁷⁶ By developing a holistic education campaign, stormwater utilities can help citizens understand better and support the proposed uses for the new utility fee.⁷⁷ An education campaign will also encourage community members to implement green infrastructure practices that can help lower the utility fee for individual properties and for the whole community. Forty-eight percent of utilities found that ongoing public information and education campaigns are essential to the continued success of user fee-funded stormwater utilities, with another 43 percent finding it helpful.⁷⁸ In order for New Jersey municipalities to implement a stormwater utility successfully, citizens must recognize their role as key stakeholders in helping prevent infrastructure failures, flooding, property damage, and poor water quality.

⁷⁵ "EPA Funding Stormwater," 2.

⁷⁶ *Ibid.*, 19.

⁷⁷ *Ibid.*

⁷⁸ *Ibid.*

Conclusion

Problem. New Jersey residents, businesses and its environment suffer from the effects of inadequate stormwater management, including flooding and water pollution, and these effects are likely to worsen as stormwater infrastructure continues to age. Outside of municipalities with combined sewer systems, New Jersey local governments and utilities lack the specific authority to raise dedicated funds to address these issues.

Solution. Stormwater utilities have been created across the country by local and regional governments to raise funds and assign responsibility for evaluating and managing stormwater assets. These utilities enable local governments to reinvest in infrastructure and plan for future improvements before emergency repairs are needed. Although a stormwater utility comes with added service fees, communities have the option to decide if they would rather pay a little now to maintain and prevent, or a lot more in the future to repair and replace.

Action. Legislation would clarify local governments' and utilities' authority to use stormwater utilities as a way to finance stormwater management. Such legislation is permissive; it would not require local governments to implement the utility and fee, but will provide them with the option to do so. Then, municipal and utility leaders can begin to evaluate the many options and opportunities a stormwater utility provides.

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