

# WHITE PAPER

FREE REPORT



STORMWATER PROGRAM FUNDING:

## Forming a Successful **Stormwater Utility**

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## What's the Benefit of a Stormwater Utility?

A huge change swept the country in 2003 when new rules under the federal Clean Water Act took effect. Some larger US cities had already set up stormwater programs in the 1990s, when Phase I of the National Pollutant Discharge Elimination System (NPDES) went into effect to reduce water pollution. But in 2003, when NPDES Phase II came along, the number of cities required to have a stormwater program dramatically increased. Under NPDES Phase II, any city with a population of 50,000 or more and a density of 1,000 people per square mile had to have an NPDES Phase II permit. For many of these smaller cities, “stormwater management” had until that time consisted of little more than flood control, but the new regulations required them to address water-quality problems as well. Setting up individual stormwater programs posed many challenges, the largest of which was funding—how to pay for the additional staff, new infrastructure, and public education and outreach efforts that these new programs required?

Some cities—a few at first, but growing in number each year—opted to establish stormwater utilities to pay for their programs. A stormwater utility is essentially a special assessment district set up to generate funding specifically for stormwater management. Users within the district pay a stormwater fee, and the revenue generated directly supports maintenance and upgrade of existing storm drain systems; development of drainage plans, flood control measures, and water-quality programs; administrative costs; and sometimes construction of major capital improvements.

Stormwater utilities have been gaining ground over the last decade as a source of stormwater program funding. The first few stormwater utilities in the United States appeared in the early 1970s. By 1994, the Environmental Protection Agency (EPA) estimated that there were still only about 100 nationwide. The advent of NPDES Phase II brought about many more of them. A 2013 survey identified 1,417 stormwater utilities, ranging from those in small communities with fewer than 100 residents to large ones like Los Angeles’s, with more than 3 million.

Forming a stormwater utility has many advantages. A utility provides a dedicated, stable funding source for a stormwater program. Unlike revenue from the general tax fund, the funding from a stormwater utility doesn’t fluctuate and cannot be diverted to other municipal programs.

Using a stormwater utility to generate program funding can also provide a greater perception of fairness to citizens. Unlike a stormwater program that draws on the general tax fund or uses property taxes for revenue, the people who benefit are the only ones who pay. The way the stormwater user fees are calculated, however, can influence how acceptable they are to the ratepayers. The section “Setting a Rate Structure” addresses this issue in more detail and shows different methods of determining fees.

But many fledgling utilities have been met with legal challenges from ratepayers—sometimes from homeowners, but more often from businesses—who object to the new fee. By some estimates, one-quarter of new utilities have been challenged in court. There are ways to avoid these challenges; carefully setting the rate structure and offering alternatives is one. Educating the public and elected officials about why stormwater management is necessary is another. This paper offers steps for doing both.

## Other Sources of Stormwater Funding

A stormwater utility can be one of several funding sources for a stormwater program. Many other sources of funding exist, but some are limited to certain types of activities or expenses. Although the stormwater utility is usually the primary source of revenue in a city that sets one up, it might be supplemented by some of these other sources:

- *General tax fund.* Historically, most stormwater programs have been funded with revenues from property taxes. There are two problems with relying on the general fund, however. One is that the share of revenue for stormwater management is not guaranteed, and funds can be diverted to other purposes that are perceived as being more urgent or more politically popular. Another problem is that in many cities the tax base has shrunk, particularly in areas with high rates of home foreclosures or falling property values, resulting in less money for all municipal programs.
- *Clean Water State Revolving Loan Fund (CWSRF).* The CWSRF provides low-interest loans for communities to meet their Clean Water Act goals. Since it began 25 years ago, the CWSRF has provided more than \$100 billion in funding, currently averaging about \$5 billion a year for controlling nonpoint-source pollution, protecting drinking water sources, treating wastewater, and other water-related projects. In all, it has funded more than 33,000 loans. The funds are typically used for capital improvement projects, purchase of capital equipment, and engineering costs related to these projects.
- *Revenue bonds.* Bonds usually provide funds for specific types of projects, such as building or upgrading infrastructure. There have been some very successful examples of cities issuing bonds for stormwater projects: In 2004 in Los Angeles, for example, voters approved bond referendum known as Proposition O, raising \$500 million for stormwater quality improvements. The measure, which required support from two-thirds of the voters, meant that an owner of a \$350,000 home in Los Angeles would pay about \$35 more in taxes each year for the next 24 years to pay back the bonds. This level of funding from revenue bonds was unprecedented, however, and it is not feasible to pay for the day-to-day operation of a stormwater program using bonds alone.
- *System development charges.* Also called capital recovery charges, these charges allow utilities or local governments to recover public funds previously spent in excess of the infrastructure capacities. The system development charge allows deferral of participation in capital costs until a particular piece of property is developed and using the system's capacity.
- *Nonpoint-source grants.* Also known as 319(h) grants for the section of the Clean Water Act that authorizes them, these grants provide federal funding for a portion of a water-quality project, with the remaining funding coming from local sources.
- *Special purpose local option sales tax.* This type of sales tax, which usually must be approved by voters, collects funds—say, an additional 1% sales tax—for designated projects. The tax is levied for a limited period, and revenue from the tax must pay only for the designated items, such as capital improvement projects, rather than for general operating expenses. During a recession, reduced spending by citizens means that this revenue stream is likely to shrink.
- *Impact fees for new development.* Impact fees are fees charged to developers based on the effect a new development will have on the stormwater system.

## Overcoming Possible Legal Challenges

### *Why the Objection to Utilities?*

Why have so many fledgling utilities faced legal action? The monthly stormwater fee for a single-family home is generally a few dollars—not enough, you’d think, to motivate the average ratepayer to go to court. For large commercial and industrial sites, however, stormwater utility fees can run to thousands, or hundreds of thousands, of dollars per year. In addition, some tax-exempt institutions—schools and universities, churches, federal government installations, and the like—balk when they find they’re not exempt from the utility fee.

Although most people do understand the benefits of clean water and streets that don’t flood whenever it rains, they tend not to realize the costs of providing stormwater services, and they often resist paying for something that, by rights, they feel ought to be the status quo. Most people just don’t feel responsibility for the problem; they’re not making it rain, after all. It’s difficult, too, for people to justify paying for something they can’t really see. Unlike drinking water or electricity, or one of the many other things homeowners and businesses pay for each month, stormwater services are mostly noticeable when they’re not working correctly.

So how do new utilities overcome these objections? Education is a big part of it, including showing people what they’re getting for their money and demonstrating that utility fees are likely the cheapest way to pay for it in the long run. Savvy marketing comes into play as well.

### *Fee or Tax?*

Opponents of stormwater utility fees often refer to the fees as a “rain tax.” It’s important to draw a distinction between a fee and a tax, because most communities have the legal authority to collect fees, but far fewer have authority to assess taxes.

A fee is generally considered to be money collected for a specific purpose—in this case, to provide stormwater services and to build and maintain stormwater infrastructure. The money collected must be proportionate to the cost of providing the service, and excess funds collected cannot be diverted and used for another purpose, as taxes can be.

Some state laws require a new tax to be approved by a public vote. Many nascent stormwater utilities have been challenged in court on the grounds that the fees constitute a new tax that the city or county is not legally allowed to levy.

In addition, some properties like churches and schools have a tax-exempt status. They still generate stormwater runoff, however, and if the stormwater charge is designated as a fee, those tax-exempt properties must pay them. This is good in terms of generating revenue for the stormwater program, but it has sometimes presented a public relations problem for communities that try to collect stormwater fees from such properties.

### *Opting Out*

In some states, to qualify as a fee rather than a tax, a charge must be voluntary—that is, property owners must be able to “opt out” by limiting their use of the service for which the fee is being charged.

With other monthly bills, homeowners and businesses can conserve—using less water to save money on their water bill, for instance—but stormwater services, obviously, don’t work this way; there is little choice involved, and the fee isn’t waived in the months when there’s no rain.

One way to allow ratepayers to opt out of at least part of the fee is to allow them to take on some of the stormwater management responsibilities themselves by retaining runoff on their own properties rather than allowing it to enter the municipal stormwater system, thus reducing the overall burden on the public infrastructure. For homeowners, this can be as simple as putting a rain barrel on their property—and, in fact, several stormwater programs have offered free or low-cost rain barrels to their customers in the hope that, if enough people use them, peak runoff will be significantly reduced. For large businesses and industrial sites, opting out or reducing the stormwater fee might involve building large-scale stormwater management facilities on their sites. These options are discussed in detail in the section “Offering Credits” below.

## What Successful Utilities Have Done

### **Set the Stage: Public Outreach**

Making sure the public understands the purpose of a new stormwater utility is essential, and it can take repeated attempts to get the message across. Water and wastewater services commonly have utilities, and there is a measurable service resulting from the fees property owners pay. However, the purpose and benefit of stormwater services are not always apparent to residents and businesses.

One public works official who was involved in forming a utility commented, “It’s a hard concept for the average customer to grasp—that stormwater needs to be managed. They see it as sort of a natural event and don’t always relate to the various services that it takes to operate a stormwater utility. I think the key point is to be very clear with customers about what the revenue goes for and to be articulate about the services that you’re delivering.”

One of the most visible benefits of stormwater management is flood control; no one wants impassable streets or flooded basements. Demonstrating why new infrastructure is needed to eliminate flooding is a strong and easily understood argument in favor of a utility.

Another benefit of stormwater management—equally important but harder to visualize—is improved water quality. If your community has had beach closures because of high bacteria counts, or if a lake in your area has experienced algae blooms because of excess nutrients in stormwater runoff, then you have obvious examples at hand. Even if not, you can promote the benefits of clean water in clear, understandable terms.

To help stormwater programs do this, EPA has made many public education and outreach materials available online at <http://cfpub.epa.gov/npstbx>. These include television, radio, and print ads and public service announcements that have been used successfully in various communities. Many were developed for the public education and outreach efforts required by various stormwater programs’ NPDES Phase II permits, and most are available for use by other communities; the terms of use are provided with each item on the website. You can browse the catalog for specific topics that might be of special urgency in your area—for example, if you’re addressing combined sewer overflows or algae blooms.

Many stormwater managers who have been through the process of setting up a utility agree that reaching out to the public—including to local environmental groups, business associations, and the city council—should be done early on

in the process. Brant Keller, who was instrumental in setting up the first stormwater utility in the state of Georgia, noted, “Somebody once said, ‘You can invite me up front to be a partner, or you can invite me in the end to be a plaintiff.’” He began his public education campaign two years before the Griffin, Georgia, utility was established. One of the points he emphasized when speaking to the public about the new stormwater fees was that it would be less expensive to pay the utility fees now than to raise money later through a special assessment tax or other means.

Another important step is to prepare elected officials, who will be on the receiving end of many of the questions and complaints about the utility. Giving them good information so that they can respond to their constituents’ concerns is critical. As Andrew Reese put it in his *Stormwater* article “CSI: Utility,” “It is important for you to help elected officials see the light long before they feel the heat. They need to be educated, armed with facts, and made to look like heroes stewarding the infrastructure, protecting the environment, defending against federal intrusion, and guiding development.”

### **Have a Comprehensive Plan**

Another important step, even before presenting the idea of a stormwater utility to the public, is to have a comprehensive stormwater management plan in place. The plan provides a clear roadmap, both for the program and the public, to define what the program needs to accomplish, how much it will cost, and how the money raised through utility fees will be spent. A good rule of thumb is to estimate costs in detail for the next three to five years, and to sketch them out for at least 10 years, especially large capital costs.

The plan should include both short- and long-term goals, and both one-time capital costs for building new infrastructure and ongoing costs to inspect and maintain stormwater facilities. Other expenses include overhead and administrative costs such as human resources, financial, and legal services as well as fleet maintenance, costs associated with billing, and similar expenses. It should also take into account any expected revenues from other sources, such as grants, bonds, or impact fees.

Having a plan and a clear idea of expenses helps in determining the rate structure. It is also essential for making sure the stormwater fee is, in fact, considered a fee and not a tax; showing that the amount of money needed is in line with the amount generated helps justify the “fee” status of the stormwater charge.



## Setting a Rate Structure

### *Fair vs. Easy*

Because impervious areas like parking lots, rooftops, sidewalks, and driveways generate the most runoff, most stormwater utilities base fees at least in part on the percentage of impervious cover of the parcels of developed land within the utility.

The most equitable way to set stormwater fees is to determine the exact amount of impervious surface on each parcel of land and charge each property owner accordingly. With the widespread use of aerial imagery and geographical information systems, it might just be possible to do so—but in almost all cases it would be prohibitively time consuming and expensive to do such painstaking calculation for individual residential properties.

What most utilities do instead is to set up a rate structure that is less complicated and easier to implement, while still making the system fair to ratepayers by taking into account the differences in property type and the different burdens that different kinds of property place on the stormwater system. Some utilities determine an average rate factor for each of several types of land uses—residential, commercial, industrial, agricultural—based on the typical percentage of impervious cover on land used for each purpose. This method might also take into consideration the typical pollutants from each land-use type. All commercial properties are then charged at the same rate per square foot, all residential properties at another rate, and so on.

Another approach is to charge a flat rate for residential parcels, but to calculate the rate separately for commercial and industrial parcels. A utility might define the typical or median impervious area for a single-family detached property; this is known as the *equivalent residential unit*, or ERU. The utility determines a fee for one ERU. Using the ERU as a basis, the utility then determines the number of ERUs for non-residential properties and for multifamily residential properties and multiplies the fee accordingly for these properties.

If this method is used, it's important to revisit the ERU periodically, especially in areas undergoing redevelopment. For example, if many older homes existed within the utility's service area at the time the utility was formed, and if a significant number of those older homes have since been expanded or torn down and replaced with larger structures,

then the median impervious area for a residential unit will increase.

In some cases, a tiered rate structure may be appropriate. A two-tier system might be used to distinguish between detached and attached dwelling units. A three-tier system might be used to set different fees for small, medium, and large dwelling units. This structure provides more fairness than using a single ERU for all residential properties, but it is still easier than calculating the exact impervious area for each individual property.

### Case Study

When setting up its utility, one city in the Pacific Northwest divided the rate into three parts: impervious-surface, administrative, and street-related components. Residential properties in the city are categorized as small (with a building footprint of less than 1,000 square feet), medium (a footprint greater than 1,000 but less than 3,000 square feet), or large. Small and medium parcels pay flat rates of approximately \$4 and \$6 per month, respectively. Each also pays a \$0.29 monthly administrative fee. Large residential parcels pay \$2 per 2,000 square feet of actual impervious surface, plus a \$0.92 administrative charge. Commercial and industrial properties pay \$2 per 1,000 square feet of impervious surface plus the same \$0.92 administrative charge.

Because public roads constitute about 21% of the city's total impervious surface area, and because everybody uses them, each stormwater user fee includes a "street-related component" to cover a share of the road-related costs. For all residential properties, the street-related component is \$0.99 per month, in addition to the other two components. For commercial and industrial properties, the street-related component is an additional \$0.70 per 1,000 feet of impervious surface.

Property owners who install a stormwater mitigation system, such as a drywell, retention pond, or bioswale, can have their impervious surface fees reduced, but the street-related component and administrative portion do not change. (See "Offering Credits" below for more on mitigation systems.)

### Offering Credits

Several types of credits may be offered to ratepayers to help them reduce their stormwater fees. Property owners who install mitigation measures—features that reduce the amount of stormwater runoff leaving the property, or treat the runoff to improve water quality, or both—can qualify for long-term or permanent reductions in their stormwater fees.

Many different options might qualify for stormwater credits. To reduce the amount of runoff from a property, homeowners can create rain gardens to infiltrate stormwater; install rain barrels to capture and store rainwater for future use, such as for landscape irrigation; or disconnect roof drains from the public stormwater drainage system, thereby retaining water from a home's roof onsite.

Commercial property owners have additional options, depending on the space they have available to dedicate to stormwater retention and treatment. They might install large detention ponds to capture runoff from the impervious portions of the property—and in some cases, to earn additional credits, even to capture runoff from neighboring properties or public streets. If there is not enough aboveground space for a pond, they might install underground stormwater vaults to temporarily detain the runoff; these are often placed beneath a parking lot. Some options that don't require as much space include installing rain gardens and bioswales to infiltrate runoff and replacing impervious surfaces like parking lots and sidewalks with porous asphalt or permeable pavers. Green roofs, constructed wetlands, and other options also exist.

To qualify for the credit, the property owner might have to meet a certain minimum goal, such as retaining the first inch of runoff from a given storm event onsite. Although some homeowners take steps to reduce their fees in this manner, credits are especially attractive to large commercial or industrial sites. If they have large amounts of impervious area, they might be paying tens of thousands, or even hundreds of thousands, of dollars per year in stormwater fees.

The utility must carefully balance the benefit it receives from property owners' stormwater mitigation measures against the revenue lost because of the credits. Are the mitigation measures removing enough burden from the public stormwater system? If the utility is generous in allowing credits, will it still generate enough revenue to cover its operating costs?

Two variations on the credit idea are grants and rebates, which are used to defray the upfront construction costs of stormwater facilities. Examples include Portland, Oregon's Community Watershed Stewardship Grants program, Washington, DC's RiverSmart Homes program, and Montgomery County, Maryland's RainScapes program. These are usually one-time grants or rebates that property owners receive for installing rain gardens, rain barrels, conservation landscaping, pervious pavers, or other approved projects.

### Case Study

Philadelphia changed its billing program in 2009 to more equitably distribute the costs of stormwater management. Instead of relying on the old meter-based system, in which the stormwater charge was determined on the basis of potable water usage, the city's water department switched to a parcel-based fee, determining the stormwater charge according to the size of each property and the amount of impervious surface. For many property owners, there was little change in the fee. But for some large industrial sites, the increase amounted to more than \$100,000 per year.

To aid the owners of these large properties, the city allows credits for many different mitigation systems like constructed wetlands, bioretention systems, and others. By managing enough of the runoff onsite, a property owner can greatly reduce or virtually eliminate the stormwater fee. The question for property owners is whether the upfront capital investment justifies the long-term savings.

The city has offered a program to provide free design assistance to commercial property owners who are considering stormwater mitigation measures. Designers assess the sites, including identifying features such as existing storm drains and inlets and mapping drainage patterns. They develop several scenarios with different combinations of stormwater mitigation options so the owners can compare the costs and benefits.

To help smaller commercial ratepayers, for whom the increased stormwater fee might not justify costly capital expenditures, the city has explored more creative options. For example, the city is retrofitting one stretch of a public street with stormwater management features like curbside bioretention systems and tree trenches. This is similar to the "green streets" programs that many other cities use to manage street runoff. However, Philadelphia has included enough storage capacity to treat runoff not only from the street itself, but also from neighboring commercial properties; those property owners can choose either to pay their stormwater fees, or to route their runoff into a bioswale located in the public right of way. They "pay" for the use of the public stormwater infrastructure either through a one-time monetary payment, or by agreeing to operate and maintain other public stormwater practices—not on their own property, but still benefitting the city's stormwater program. More cities may look for flexible and creative solutions such as this.



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