

ENVIRONMENTAL FINANCIAL ADVISORY BOARD

February 26, 2016

Members

Karen Massey, Chair

Helen Akparanta

Aurel Arndt

William Cobb

Edwin Crooks

Hope Cupit

Lisa Daniel

Marie De La Parra

Donna Ducharme

Rick Giardina

Ann Grodnik-Nagle

Heather Himmelberger

Jeffrey Hughes

Philip Johnson

Mark Kim

Suzanne Kim

Courtney Knight

Thomas Liu

James MacAdam

Mathilde McLean

G. Tracy Mehan, III

Wayne Seaton

Blanca Surgeon

Joanne Throwe

Leanne Tobias

Jeffrey Walker

Jennifer Wasinger

Richard Weiss

Michael Shapiro

Designated
Federal Official

Dr. Andrew Sawyers, Director
Office of Wastewater Management
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Dr. Sawyers:

The Environmental Financial Advisory Board (EFAB) is pleased to present you with recommendations on how the Water Infrastructure Resiliency and Finance Center (WIRFC) can best support communities across the country in developing dedicated sources of revenue for stormwater and green infrastructure.

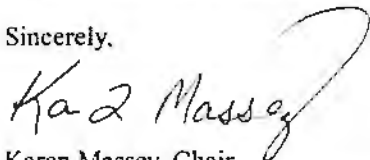
Under your leadership, EFAB was issued a charge from the U.S. EPA's Office of Water in May 2015 to identify innovative ways WIRFC could help local governments develop dedicated stormwater revenue mechanisms. A work group was soon formed and charged with (1) identifying the common challenges to developing a dedicated stormwater revenue stream, (2) outlining the steps municipalities should take to develop a dedicated source of revenue, and (3) noting how WIRFC could use its resources effectively to help with each step.

The EFAB believes that the question of funding for stormwater and green infrastructure should go beyond advancing only the adoption of stormwater utility fees and should include a variety of options that best fit a community's social and geographic profile as well as its economic and political structure.

The EFAB identified several key barriers to implementation that included political, legal, geographical, equitable, administrative, financial, and educational challenges. EFAB identified several opportunities for the U.S. EPA to play a significant role in helping local governments overcome these barriers. Specifically, EFAB recommends utilizing WIRFC to help local governments determine specific costs relating to stormwater management, evaluate a variety of revenue options in more detail, examine equitability and affordability concerns more closely, create an implementation framework for the collection and segregation of revenues, utilize technology more often in determining costs, and communicate effectively with stakeholders. For WIRFC to focus its attention on providing support to local communities in these areas would go a long way in expanding stormwater financing mechanisms nationwide. EFAB feels that providing local governments with access to targeted training, revenue options, case study examples, technology resources, and reliable cost data will empower communities across the country to expand their funding of stormwater and green infrastructure.

We are pleased to provide you with the detailed results of our recommendations in a document entitled "Developing Dedicated Stormwater Revenues." We hope that you find our analysis and specific recommendations valuable and thank you for the opportunity to assist you with this charge.

Sincerely,



Karen Massey, Chair
Environmental Financial Advisory Board

Enclosure

Agency Charge:

HOW CAN WIRFC BEST SUPPORT COMMUNITIES TO DEVELOP DEDICATED SOURCES OF REVENUE FOR STORMWATER AND GREEN INFRASTRUCTURE PROGRAMS?

WIRFC will focus on supporting the development of dedicated sources of revenue for community stormwater and green infrastructure programs. Managing stormwater is a key challenge for many communities across the country whether the motivation is flooding, water quality, and water quantity or community revitalization. There are approximately 8,000 local governments that are required by NPDES permit to implement stormwater programs. Financing these programs and encouraging green infrastructure approaches is a priority and a challenge for the U.S. EPA and many communities.

WIRFC requests that EFAB identify barriers to communities to develop dedicated sources of revenue for stormwater and green infrastructure programs and ways to address those barriers. Identify actions that WIRFC, together with its partners, could take to propagate more communities with dedicated revenue sources.

Introduction of Agency Charge and Statement Regarding Framework of Paper

The Environmental Finance Advisory Board (EFAB) has been charged with recommending innovative ways in which the new Water Infrastructure Resiliency and Finance Center (hereafter known as WIRFC) can best support communities across the country in developing dedicated sources of revenue for stormwater and green infrastructure. EFAB will address this charge by (1) identifying the common challenges to developing a dedicated stormwater revenue stream, (2) outlining the steps municipalities should take to develop a dedicated source of revenue, and (3) noting how WIRFC could use its resources effectively to help with each step.

Decisions about stormwater financing involve economic as well as political considerations. Local governments must decide what stormwater services to provide, assess what the costs and benefits will be for those services, and determine how to spread those costs among their various constituents. They must take into consideration what they are mandated to do, how climate change may be impacting their stormwater investments, what projects to prioritize, and how best to utilize limited resources to create and deliver the most cost-effective program that will ultimately achieve the desired stormwater goals. Controlling stormwater has always been important for water quality, but as the climate changes, it is also important for storm resiliency and protecting neighborhoods.

As EFAB sees it, there are key barriers to overcome that go beyond the current capacity of many communities and would be appropriate focus areas for WIRFC to help communities overcome and build capacity. The challenges include but are not limited to the following:

- ***Political support.*** Gaining buy-in and support for stormwater financing programs from elected officials and key citizen groups can be challenging. Raising and maintaining political will requires

focusing on the idea that stormwater financing is necessary, important, fair, and not just another new tax. Developing *stormwater champions* takes time and resources.

- **Legal constraints.** Legal barriers to establishing stormwater funding mechanism are varied. There are several states in the U.S. that explicitly prohibit stormwater utility fees. There are other states that have enabling legislation to authorize utility fees, but, despite this, some local governments are concerned that implementation could result in lawsuits and future legal challenges related to setting up and administering a dedicated stormwater funding mechanism. In some states, the wording and structure of enabling legislation that authorizes a dedicated fee structure for multiple partner municipalities is confusing for localities that are too small to pursue a stand-alone structures. Such is the case in Pennsylvania where regional approaches are being pursued in the counties of Blair, York, Lancaster, and Montgomery, but, even there, one of the major barriers to implementation is concern about the confusing details of the enabling legislation and fear that implementation won't conform and will be mired in legal challenges. The lack of enabling legislation authorizing stormwater utilities in most states, vague and ambiguous statutes, and the lack of financial resources to pay for legal disputes are major barriers and deterrents for many communities.
- **Geographical jurisdiction and values.** Communities that consist of both urban and rural areas within a single jurisdiction find it difficult to implement stormwater or green infrastructure projects given the potential different perspectives of control and responsibility. Local governments that share the burden of making water quality improvements to a waterbody may not agree on responsibility and therefore do little, if anything, assuming it is the responsibility of the other party. Being the first community to enact stormwater financing mechanisms is a daunting, and often more costly endeavor, because more resources will be needed to navigate the process for the first community that attempts it.
- **Equity and affordability concerns.** Communities have families with a wide range of income levels. The affordability factor often plays into the "who pays" distribution to families or small businesses that often bear the brunt of stormwater costs based on their geographic footprint. Local governments seeking to reduce the financial burden on low income families are challenged by the fact that many of these families live in areas where flooding is most prevalent, as often these floodplain areas are the location of affordable housing and the more impervious surfaces add to the problem. To be effective in the long-term, stormwater financing must be fair and transparent, but the concerns over equity have proven to be a difficult barrier for many urban areas to overcome.
- **Administrative demands.** Implementing and managing a stormwater financing mechanism can be a significant administrative burden for most local governments. Local governments may lack adequate billing systems, lack scientific data, have limited GIS capabilities, or have little to no internal systems of administrative support. Stormwater responsibilities are often shared across various departments, so coordinating the needs and available resources can be a barrier that also needs to be addressed.

- **Financial resources.** With limited existing budgets and available resources, and the fact that other local priorities such as transportation, public safety, and schools take priority in budget allocations, stormwater often falls to the end of the funding list. Without additional revenue sources, many communities are unlikely to make a dent in their stormwater needs.
- **Lack of information and awareness.** A general lack of understanding within local governments and the community regarding the need for financing stormwater activities is another common barrier for communities. Even with the heavy emphasis by EPA on the many benefits of green infrastructure, there is limited awareness of the benefits of incorporating green infrastructure projects instead of solely focusing on funding large-scale grey infrastructure projects. There is also a common misperception among communities that stormwater management doesn't require the same infrastructure improvements, oversight, overall management, or funding level that is needed for drinking water or wastewater¹ management. By way of example, a 2015 survey in York County, Pennsylvania² showed that residents believed the average stormwater expenditures were approximately \$25,000 per municipality, when in fact, the average expenditures were \$250,000, and the actual amount needed to cover stormwater management for most of the municipalities was several times higher than what was being spent. This misconception is one of the main reasons behind the limited dedicated funding spent on stormwater compared to other water services provided by a local government. Financial limitations for stormwater and green infrastructure programs are also often compounded by the lack of information of a community's assets, what condition these assets are in, what costs are involved, insufficient scientific data, and limited awareness of how to properly manage stormwater and implement green infrastructure projects.

In this report, we will discuss many of these barriers and highlight opportunities to provide assistance to help overcome them and enhance and expand stormwater and green infrastructure financing across the United States. We will do this by outlining the steps a community should undertake when developing dedicated stormwater funding, which include:

1. Develop a stormwater management framework and determine costs associated with managing stormwater
2. Examine revenue options and analyze alternatives
3. Determine details of revenue structure to fund stormwater costs equitably
4. Create implementation framework for collection and segregation of stormwater revenues
5. Utilize technology to determine stormwater costs and revenue options

¹ To note, in this document, "wastewater" is used to refer to sanitary flows; it does not include stormwater flows.

² At the time of this report being issued, York County Planning Commission was in the process of making the results from a stormwater feasibility study available to the general public. For more information as it becomes available, please reference http://www.ycpc.org/divisions/long-range-planning/stormwater.html#Doc_Reports

6. Communicate with stakeholders about the need for and structure of the stormwater revenue source

Activities Local Governments Should Consider When Developing a Dedicated Source of Revenue and the Possibilities for WIRFC to Provide Assistance in These Areas

1. Develop a stormwater management framework and determine and determine costs associated with managing stormwater

Local governments often struggle with understanding exactly what stormwater revenues are needed to address their stormwater needs and deliver a level of service that will meet their stormwater goals. As municipal rates and charges are usually established based on a cash-needs approach, the first step towards developing dedicated sources of revenue for stormwater and green infrastructure programs is often determining the expenses that need to be covered. If the local government currently pays for managing stormwater as part of its overall wastewater treatment, what portion of the total wastewater costs are due to managing stormwater? For instance, how much of the capital investment is specifically related to stormwater management? Or, in a combined system, how much of the wastewater treatment capacity was constructed in order to handle stormwater flows? Many small to medium sized communities often struggle with understanding what stormwater assets are within their jurisdiction and determining the condition of the assets. Many stormwater infrastructure systems around the country are very old and in need of significant replacement or repair, but without a complete mapping of these systems, which many communities do not have, replacement is not occurring until an emergency occurs that costs much more than a repair would have cost if a proper asset management program had been in place. In light of the impacts that changing climate conditions has on aging assets, understanding location, age, and overall condition of existing assets is more critical than ever as communities begin to assess true costs associated with managing stormwater.

In addition to improving the way assets are managed, there needs to be more attention paid to municipal services that are not always attributed to stormwater. For example, if street sweeping services or cleaning catch basins provides substantial stormwater benefit as well as solid waste benefits, what percentage should be attributed to stormwater? What soft costs related to general program management, education, and research should be included? Also, if the municipality needs to invest in additional stormwater management, what will the related costs be? Identifying existing and future costs is complex, and some municipalities may not know where to begin or what gaps currently exist in their program that need funding. Feasibility studies that evaluate costs are not always affordable; therefore, communities' inability to fund such studies limits the ability to develop dedicated funding.

WIRFC could identify and promote a better understanding of stormwater management costs by providing the following:

- **Fact sheets, financial worksheets, templates, and guidebooks.** These useful documents about the types of stormwater costs that are frequently incurred would help municipalities identify their own system's comparable costs.
- **Asset management training.** There are significant gaps in asset management training programs for stormwater. This type of technical assistance is available for drinking water and wastewater but often overlooked and lacking for stormwater. It is difficult for local governments to develop a dedicated funding mechanism for stormwater when they are unaware of their entire system's condition, location, and age. WIRFC should also note that a gap exists in asset management not just for urban communities but also for more rural communities that often overlook soft infrastructure such as ditches and culverts that need to be better managed and maintained in order to work properly. Any successful stormwater funding mechanism should focus on a complete understanding and assessment of all assets that need to be managed.
- **Workshops and training.** Trainings should be led by stormwater financing experts who can assist with financial cost analysis and revenue calculations to help prompt better understanding of costs. This training could also include what is often unavailable cost information related to engineering estimates, equipment replacement, long-term maintenance costs, GIS and mapping needs, monitoring and modeling data, and other budget items that are often missing or greatly under-calculated in stormwater financing programs. Assistance with financial cost analysis coupled with asset management training for stormwater will go a long way in justifying a dedicated funding mechanism to elected officials and citizens.
- **Examples of how costs can be allocated between different programs.** Showing examples of costs for items such as wastewater and stormwater management, street maintenance, and the additional wastewater capacity that is needed to handle stormwater and showing allocation methodologies for utility administrative overhead would provide helpful background information to communities and show how these costs can be allocated.
- **Examples of project management and operations and maintenance cost overlap between stormwater, wastewater and drinking water.** Providing more information so that each utility could think about its system holistically and identify and achieve efficiencies in water-related programs would be helpful in informing communities' analysis of costs.
- **Cost benchmarks for both green and gray stormwater management options.** This would include capital and operations and maintenance costs for both options, as well as advice on how a utility might evaluate its own needs and establish a cost basis using the benchmarks.
- **Examples of how communities have successfully evaluated their stormwater management costs.** There are so many examples of how this is done around the country in ways that would make sense for many local governments. These need to be collected and made available in an easily accessible format and location.

- **A list of funding sources that can be tapped to pay for the initial analysis, if such funding sources exist.** This information should be updated often and preferably available on a state by state or regional basis, if possible.

Develop a Framework/Design Requirements. One important facet of stormwater management and the estimate and public-private allocation of stormwater costs is the community's stormwater design requirements. Therefore, when developing a stormwater charge, each community must develop (or review existing) guidelines for the design and construction of stormwater management systems, including performance requirements for stormwater release/detention. The community must also develop a framework for ongoing review of such installations and could provide mechanisms for granting credits or fee allowances based on a property owner's installation of stormwater management infrastructure on his/her private property.

WIRFC could assist local communities on better design requirements by:

- **Reviewing local and state manuals of existing stormwater best management practices, summarizing them for communities, and identifying barriers to implementing such guidelines.** For example, many of the manuals do not give credit to certain types of green infrastructure that provide ancillary benefits.

2. Examine revenue options and analyze alternatives

Stormwater utility fees based on property attributes such as lot size and impervious area have been the most discussed and fastest growing dedicated source of stormwater revenue in recent years; however, these fees are not the only option available to communities. The legal authority for establishing stormwater revenue financing mechanisms vary considerably across the country. In some regions/states, communities have the authority to enact stormwater impact fees on new development to cover the cost of developing stormwater infrastructure, and many local governments rely on plan review and permitting fees to supplement their stormwater management budgets. In some areas of the country, units of local government are authorized to charge special stormwater or watershed property taxes. Property assessment programs, similar but distinct from taxes, are used by some units of government to fund stormwater and green infrastructure installations that benefit a subset of property owners in a particular jurisdiction. However, dedicated revenue does not always require a new dedicated fee or tax. Local governments that are reluctant to create a new fee or tax may be willing to earmark a steady stream of their existing tax revenue for stormwater purposes. Finally, in some parts of the country that rely on combined sewer systems, a portion of wastewater utility fees may remain an important stormwater management revenue source.

Local governments often struggle with evaluating which stormwater revenue source would be best suited for their particular community based on the local economy, culture, geographic makeup, and government structure. Deciding how to design and implement an appropriate revenue structure is often very burdensome, so the result is inaction or a system that is perhaps easiest but may not be the most effective.

The rate or tax design should be a process of developing an ideal system that can actually be implemented. There are particular challenging considerations that need to be considered when developing a financing mechanism, and the lack of resources even for things like a feasibility study, outreach activities, or educational materials are often a hindrance.

WIRFC could help communities overcome these challenges by:

- **Identifying common revenue sources.** WIRFC could collect and disseminate information or data to show how different municipalities fund their stormwater needs (e.g., allocation from general funds, line item on property tax bills, separate stormwater tax districts, component charge on wastewater bills, separate stormwater fees, and environmental fees).
- **Evaluating benefits and appropriateness of different revenue options.** WIRFC could better outline the pros and cons of each funding option and provide references and case study examples for each option. For instance, separate stormwater tax districts, such as in Washington, D.C., could provide communities with the opportunity to leverage identified revenue sources by issuing bonds backed by a pledge of dedicated stormwater fees. These revenue sources could also provide communities with the opportunity to leverage private capital in P-3 or public-private-partnerships.
- **Providing technical assistance to evaluate best options.** All communities differ in terms of financing needs and their ability to implement a financing program. Deciding what may work best under specific local constraints (e.g., political, administrative, economic, etc.) can be hard for a community to self-evaluate. The outside perspective of a technical assistance provider can offer an expert, politically-independent opinion regarding best options for a community. WIRFC could provide this by leveraging the Environmental Finance Centers (EFC) across the country, working with other EPA grant programs to provide assistance, and leveraging partnerships with non-profits and foundations that have similar priorities but are yet to provide this type of technical assistance.
- **Hosting webinars.** WIRFC could help promote and emphasize stormwater financing options through webinars given by its existing partners and grant recipients such as the EFC's, the Water Environment Federation (WEF), the International City/County Management Association (ICMA), TetraTech, and others.
- **Developing decision support systems for evaluating most suitable financing option.** Dashboards and other decision support system software and tools are very useful for identifying, evaluating, and educating local governments about the need to enhance and improve their water programs. They can also be developed for helping communities undertake the process of evaluating suitable funding options by asking the right questions and showing an analysis of options based on community information such as local capacity, size of the community, regulatory drivers, etc.
- **Promoting demonstration projects.** WIRFC could promote existing grant programs or develop new grant programs to provide planning resources; WIRFC could also provide technical assistance, as noted above, to communities that have or are pursuing dedicated revenue sources and then

highlight these success stories and document the process used. This would be especially useful in areas around the country that have few funding mechanisms in place.

- **Developing and promoting resource guides.** There are few resource guides on how to develop appropriate programs that are right for various sized communities; WIRFC could develop a resource guide. There are some guides at the regional level (e.g., Florida's guidebook) that could serve as a starting point for WIRFC.
- **Developing and promoting case studies.** WIRFC could review, collect, and make more readily available the many examples of stormwater tax districts and fees and provide information on their credit structures, ensuring that successful examples are being shared.

3. Determine details of revenue structure to fund stormwater costs equitably

It is important to note that many local governments have difficulty in fairly identifying the impacted parties or potential beneficiaries of stormwater projects. Most stormwater projects are implemented because of the need to improve water quality or control water quantity, but there is a need at the local level to create a more equitable process for any financing mechanism that is imposed on various users. Assistance at the local level to identify who benefits from stormwater improvements and how the improvements will impact them needs to be spelled out clearly to the citizens. This analysis helps to gain buy-in, but it is usually not well articulated by local governments to their citizens and businesses. Additionally, universities and large subdivisions may also have their own stormwater permits to meet and often do not coordinate with the county or municipality in which they are located. A lack of coordination between permit holders can result in costlier implementation of best management practices, duplication of outreach efforts, and inefficiencies in overall operations and maintenance programs. Collaboration and coordination are often lacking locally because of the lack of understanding of how costs can be lowered and water quality improved by working together.

Opportunities to overcome these challenges that could be facilitated by WIRFC include:

- **Developing new resource material highlighting the benefits of collaboration.** WIRFC could work with other EPA offices, the EFC's, and non-profit organizations to promote the many benefits of collaboration across permit holders to lower costs and create efficiencies.
- **Assisting in cost recovery evaluations.** WIRFC could help localities examine what impact different structures will have on recovering costs fairly from the beneficiaries. **Developing a process for clearly defining the impacts on potential users and benefits.** There is a need to identify disconnection and barriers where people/organizations would have a clear benefit but wouldn't pay a fee (e.g., DOT). WIRFC could help develop a process by which communities could identify such parties.
- **Considering affordability of stormwater revenue sources.** WIRFC can help provide mechanisms for local governments to evaluate the affordability impact on various classes of customers either through the EFC's or through other grant programs.

- **Developing basic tools to assess financial impacts.** WIRFC can provide different financing options for different customers either through a dashboard spreadsheet tool or through other decision support systems.
- **Providing affordability data.** There has not been much written specifically about stormwater fee affordability or segmentation, and this is an area where WIRFC could add value by collaborating with EPA to refine the financial capacity framework and collaborate with municipalities in their individual fee analysis. Seattle and Portland could provide good examples of stormwater affordability considerations.

4. Create implementation framework for collection and segregation of stormwater revenues

Segregated stormwater utilities can provide a dedicated source of revenue for stormwater in the long term, but such separate utilities will not be adopted by all local governments. Many local governments will pursue combined utilities for stormwater, drinking water, and wastewater to share costs across the three systems and create economies of scale. Other local governments may seek stopgap funding sources such as tapping into general reserves or one time federal and state grants. As EPA is aware, most of these stopgap-funding sources may pay for capital improvements, but they won't cover operations and maintenance costs. Most communities don't realize this fact and are consistently seeking capital funding alternatives to pay for stormwater and green infrastructure capital projects without consideration of ongoing O&M needs. WIRFC should promote stormwater financing in ways that would prompt a discussion and understanding of what the best options are for a community.

If the creation of a distinct legal entity, fee, or tax is being considered by a community, WIRFC could assist by doing the following:

- **Sharing information about communities that have successfully established a dedicated stormwater utility fee or watershed tax.** These communities could serve as models, and ideally, be willing to act as mentors to the new utilities.
- **Acting as a facilitator to make connections between communities within regions whenever possible to help foster and guide those considering forming a separate stormwater utility or tax district.** Peer-to-peer learning has been found to be one of the most effective ways of initiating change at the local level. Hearing firsthand from communities that have implemented a financing program and learning how to overcome potential challenges can be compelling to communities that are unsure of how best to move forward.
- **Supporting more training activities or information guides on outlining the step-by-step process used to create a stormwater utility, and provide specific guidance on how to overcome potential barriers based on local case study examples.** Guidance on setting up an equitable program, setting up the most appropriate rate system, getting buy-in from elected officials, and gaining community support is difficult to find but often requested. "Empowering communities" is a phrase often used by the EFC's across the country, and a step-by-step guidebook on these topics is needed to educate communities on what needs to be done to overcome barriers. An important

part of the guidance and information that WIRFC could provide would be how to combine the message about the importance of managing stormwater based on a permit obligation or a water quality issue with a focus on local assets and improving public health so that the resulting message would resonate with the community. The EFC's that have worked on implementing stormwater utilities have found that finding a local issue such as a river, a recreational activity (fishing, hiking, trails, and kayaking), a public health or safety concern, home value, or a beautification improvement is one of the most effective ways of getting a stormwater financing mechanism in place.

If the community is not interested in creating a separate stormwater utility but would like to establish a dedicated source of funding for stormwater purposes, WIRFC could assist by:

- **Providing examples of systems that have established funding sources without establishing a separate stormwater utility.** These examples could include a list of references with first-hand experience with issues such as establishing reliable means of budgeting or appropriation or segregating revenues at the time of collection (e.g., from tax or other water revenues).
- **Promoting more activities where successful examples can be shared and providing mentoring opportunities.** As mentioned above, peer-to-peer learning has been found to be one of the most effective ways of initiating change at the local level.

5. Utilize technology to determine stormwater costs and revenue options

Many communities across the United States lag far behind in using technology to assess program costs and to implement financing mechanisms such as fees based on impervious areas. This lack of technological capacity can impede the adoption of successful stormwater and green infrastructure financing mechanisms implemented at the local level. Billing systems for stormwater financing mechanisms are also confusing and can be an administrative problem if not implemented properly. Lastly, the design and construction of some stormwater best management practices may not be based on the most up to date technology or the latest guidelines. If stormwater financing mechanisms are to become more widely adopted, the latest and best information needs to be made accessible to local governments.

Geographical Information System (GIS) Survey. As stormwater runoff is a function of rainwater hitting the earth, and the effectiveness of stormwater management is frequently measured in inches per acre, one of the important metrics to consider when developing a stormwater fee is land area, specifically the impervious land area. Therefore, an important step for most municipalities is to undertake a GIS survey of impervious land area and incorporate the results into the stormwater charge analysis.

To overcome the gap in GIS survey information, WIRFC could assist by:

- **Providing case studies to communities considering a GIS survey.** These case studies would describe how other utilities have undertaken GIS surveys and incorporated the results into their stormwater rates.

- **Developing a list of universities with GIS labs and other capabilities that could partner with local jurisdictions to support or enhance their GIS needs.** Many GIS labs exist but are underutilized by local governments. Providing an opportunity to identify and connect these important resources to local governments would be very beneficial.
- **Using its influence to reinforce the need to have GIS resources at the local level.** Promoting the importance of utilizing GIS resources as part of a stormwater program would have a big impact on local governments trying to assess stormwater financing programs.

Billing Logistics. Often, there is an ideal and theoretical way to structure a stormwater charge; however, its actual billing might not be technically feasible. Therefore, when a municipality is considering implementing a stormwater charge, it must evaluate its billing system and determine if the charge can be billed by its existing system, how it can be done, or what additional billing system capacity it needs to develop to bill such charges.

WIRFC could assist communities in this evaluation by:

- **Providing case studies and specific information that would describe how other utilities have billed stormwater charges or applied billing credits.** These case studies and additional resources could include detailed information about the billing system each community used.

6. Communicate with stakeholders about the need for and structure of the stormwater revenue source

Developing dedicated stormwater revenue sources generally requires, at a minimum, the support of local elected officials, and it often requires the approval of voters. Given that stormwater management is not usually considered a high priority among community needs, developing effective communications strategies and tools is essential. Proponents must communicate skillfully to build political will and effectively link stormwater management with community priorities such as water conservation, flood control, and natural resource-based tourism and economic development. The significance of communications as both an obstacle and an opportunity is often underappreciated by municipal officials.

The majority of existing resources on stormwater outreach and communications do not address the politically fraught process of “selling” a new government fee. A few good resources do exist regarding messaging and communications around the development of stormwater revenue sources (such as: American Rivers <http://www.americanrivers.org/initiative/stormwater-sewage/projects/developing-messages-for-change-stormwater-communications-research-and-tutorial/> and Choose Clean Water <http://choosecleanwater.org/toolkit/>); however, these are tailored more toward advocates than to government agencies and officials who are usually responsible for developing and communicating about new revenue structures.

In terms of communication, WIRFC could assist by doing the following:

Environmental Financial Advisory Board Report: Developing Dedicated Stormwater Revenues

- **Supporting communities in their communications efforts by documenting and analyzing case studies of both successful and failed campaigns to develop revenue sources.** As a result of this analysis, WIRFC may be able to develop useful resources around effective communication principles, key pitfalls to avoid, and methods for developing partnerships needed for successful communications campaigns.
- **Providing more training opportunities (webinars, workshops, etc.) for municipal officials.** This could be done in partnership with nonprofits like American Rivers, ICMA, and others that would focus on effective communications campaigns for developing stormwater revenue sources.
- **Linking local leaders with supportive and potential partner organizations in their region.** There are many local partners that can be found to help move the process along faster and more effectively. Often, however, these partners are not identified as a resource or otherwise engaged in the effort. Overlooked partners include city departments like Parks and Recreation, Public Works, Planning or local watershed groups. Highlighting the importance of engaging these partners early and often will make a difference in the outcome.
- **Acting as a sounding board regarding the community's concerns and provide the community with similar state/municipal/utility references of whom to ask questions/advice.** Since there is no central place for a local government to go for advice, providing a forum or location for getting answers to overcome obstacles or connect communities' concerns is vital to a successful outcome.

Additional Resources

For the sake of this report, we have simplified these six steps that a community must take to develop an effective source of dedicated stormwater revenues. However, connected with all of them, WIRFC could help local communities by providing a bibliography of valuable resource documents, such as:

- Reports from:
 - The National Association of Clean Water Agencies (NACWA) <http://www.nacwa.org/>
 - The National Resource Defense Council (NRDC) <http://www.nrdc.org/>
- National Research Council. *Urban Stormwater Management in the United States*. Washington, D.C. The National Academy Press, 2009.
- Western Kentucky University. *Stormwater Utility Survey 2014*. Western Kentucky University. 2014.
http://wku.edu/engineering/civil/fpm/swusurvey/wku_swu_survey_2014_incorporating_rd_comments.pdf
- *Local Government Stormwater Financing Manual*. University of Maryland. January 2014.
<http://efc.umd.edu/localgovernmentstormwaterfinancingmanual.html>

Environmental Financial Advisory Board Report: Developing Dedicated Stormwater Revenues

- **Methods and Strategies for Financing Green Infrastructure:** <http://www.efc.sog.unc.edu/reslib/item/methods-and-strategies-financing-green-infrastructure>
- *Running Meetings: Lead with Confidence; Move Your Project Forward; Manage Conflicts.* The 20-Minute Manager Series. Boston, Massachusetts: Harvard Business Review Press, 2014.
- *Stormwater Utility Fees: Considerations and Options for Inter-local Stormwater Working Group.* New England Environmental Finance Center.
- *Auditing your Town's Development Code Issue Brief – 9/2013 Environmental Finance Center Network*
- *Green Infrastructure Finance Map.* University of Maryland Environmental Finance Center. 2014. <http://efc.umd.edu/gimap.html>
- *Managing Wet Weather with Green Infrastructure Municipal Handbook,* US EPA 2008
- How-to guides currently being compiled into “clearing house” and organized by state and region
- Case studies on recent implementations across the country
- List of EFCs, not-for-profits, and consultants providing assistance regarding stormwater fee process

Conclusion

Helping communities develop dedicated stormwater revenues is a big task for WIRFC to assume. In this report, we have attempted to outline some ideas about how WIRFC might address this responsibility. Additionally, we hope that WIRFC will have the broader support of EPA in fulfilling this mission. If so, other options for developing mechanisms for stormwater funding could include the EPA collaborating with DOT to evaluate highway funding options and the cost/benefit tradeoffs of investing in stormwater control. EPA could also promote better collaboration and communication of materials and resources on the issue of stormwater financing through state agencies and non-profits that are closely tied to local governments. Many partners and existing resources are available but are not well known or easily found. EPA and WIRFC could be the catalyst that supports and better aligns these sectors, partners, and resources.

