Financial Strategies for Stormwater Management

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With the promulgation of the final rules for NPDES Phase II Stormwater Permits on December 8, 1999 *(Federal Register* Vol. 64, No. 235, pgs. 68722- 68851), the question of programmatic and financial impacts is clearly in the forefront of those Public Works officials who will be challenged to comply. As stated in a companion article, the approach in this phase of the program to address water quality, is to focus on six specific programmatic elements for implementation of Best Management Practices (BMPs).

There is significant flexibility within the regulatory structure for the regulators and for the impacted communities. With the flexibility comes less certainty on cost impacts to potential permit holders. The impacted community, estimated to be many thousands of towns, counties, cities, military bases, state highway departments, and universities, is as variable as the regulatory options, making estimation of regulatory costs difficult.

Costs of Stormwater Programs

Stormwater programs are made up of the following components: administration and financial management, operations and maintenance, regulation and enforcement, engineering and planning, capital investment, water quality, public involvement and education, technology, and other miscellaneous activities. For advanced stormwater programs the three biggest cost items tend to be operations and maintenance, capital investment, and water quality. The cost of managing stormwater can be quantified in terms of cost per developed acre per year. Based on experience across the country, the table on the following page has been developed by the authors to describe unit costs associated with the level of service provided by typical stormwater programs.

Many communities are wondering what Phase II will cost. There have been several attempts at estimating potential costs of the Phase II programs including: 1) looking at Phase I costs, 2) estimating program costs through the use of a hypothetical stormwater program thought to comply with both minimal and more comprehensive expressions of the six minimum controls for several size cities, 3) survey information of impacted communities, and 4) application of cost information in a rule-of-thumb context. On balance, all of the methods indicate that there is a wide range of potential cost, from about $1.50 per person per year to about $8.00. However, the costs can go much higher depending on what components are considered part of the program. EPA's current cost estimate can be calculated for any city as:

Annual Cost = $1,525 + population/2.62 * $8.93

Funding Options

Currently, the typical funding option for investment in the maintenance and operation of the storm drainage infrastructure within a public agency is through general tax revenues. The drainage system is often managed as a part of the overall street maintenance system. The challenge within the NPDES Phase II program is to recognize that not only is the traditional infrastructure impacted by the rules, but other areas of public agency management will be involved. This includes the Planning Department, the Public Information operation, many internal public works divisions, sedimentation and erosion control programs, and other inspection services. The rules have a far-reaching impact on organization as well as the community as a whole.

Typical Costs of Stormwater Management Programs

Program Level	Program Cost per Acre per Year	Typical Program Features
Incidental	$15- $30	Reactive incidental maintenance, and regulation as part of other programs
Minimum	$30- $60	ADD: right-of-way maintenance, better regulation and inspection, more staff, and erosion control
Moderate	$60- $90	ADD: additional maintenance programs and levels of service, better regulation and inspection, some planning, minor capital programs, and general upgrade of capabilities
Advanced	$90- $150	ADD: maintenance (of some sort) of the whole system, master planning, regional treatment, some water quality, data collection, multi-objective planning, strong control of development and other programs, and utility funding
Exceptional	Over $150	ADD: Stormwater quality, advanced flood control, advanced levels of service for maintenance, aesthetics become more important, and public programs

What Are My Options?

Stormwater programs are funded with both primary methods and secondary methods. Primary methods have the characteristic that they generally have adequate capacity and flexibility to fund the bulk of the stormwater program. These can be lumped into two categories: general fund revenues (property tax, franchise fees, local income tax and/or general sales tax based) and stormwater user fees (sometimes called a stormwater utility).

Secondary funding methods are used to enhance equity or simplicity. These include various kinds of fees (e.g. impact fees or plans review fees), debt financing, grants, or government cost share programs, special assessments, improvement districts, connection charges, in lieu of fees, etc.). Each of these secondary methods has conditions and limitations that restrict their use to specially targeted parts of the stormwater program.

Choice of funding mechanisms is best driven by the goal of the program to be implemented. For example, if a capital improvement program is undertaken, utilizing general tax revenue is probably not appropriate. Debt financing is the more likely method of choice, depending on the magnitude of the improvement, but requires political support and can only be used for capital. Assessments are a dedicated source of funds that may be available, but they require that the funds be spent in advance and recovered from those who benefit. Some agencies use plan review and developer fees to assist in funding operations and improvements; however these are highly variable and are generally dedicated to specific operating activities.

Each of these sources should be evaluated against several tests to ensure that when used they are the most appropriate choice of funds. Ask the following questions to ensure that the right method is utilized:

1. What is the political acceptance of this funding method?
2. Is it equitable? Are the benefits accruing to those who pay?
3. Is it feasible to implement?
4. Is it relatively easy to administer?
5. Is it legally defensible?
6. Can it generate sufficient funds to get the job done?
7. Will it provide a dedicated source of funds or will others be competing for the same dollars?

Comparison of Two Primary Methods

Most local officials are familiar with general fund-based methods. A stormwater utility can be seen as an umbrella under which individual communities address their own specific needs in a manner consistent with local problems, priorities, and practices. With the expected needs for increased stormwater management programs, the stability and adequacy of a utility provides a great advantage over other financing methods.

- **A Funding Method**- a method or mix of methods for providing adequate, stable, and equitable funding for the comprehensive stormwater program.
- **A Program Concept**- a comprehensive stormwater quantity and quality program with an effective balance of capital, operational, regulatory, engineering, planning, and administrative activities.
- **An Organizational Entity**- a legal entity with the authority to regulate stormwater management, operate stormwater management systems, and assess fees and charges.

At a minimum, a stormwater utility is a method for obtaining funds for the stormwater program. Stormwater utilities typically generate most of their revenue through "user" fees. "Use" of the stormwater system is defined as the demand a property places on that system and the stormwater services and facilities provided which protect the property, downstream properties, and the receiving waters. Each property generates stormwater runoff that flows into the drainage system and each property owner benefits, in some way, from safer streets, cleaner water, etc. The demand a property places on a system is traditionally measured in terms of the peak flow of stormwater runoff generated by the property. The greater the flow the greater the use and, thus, the greater the user fee. Sometimes volume of runoff and runoff pollution are also included. Impervious area is typically measured or estimated to account for peak flow increases and charges calculated accordingly.

A stormwater utility is seen as *equitable* because the cost is borne by the user on the basis of the user's demand placed on the drainage system. A stormwater utility is seen as *stable* because it is not as dependent on the whims of the annual budgetary process as taxes. A stormwater utility is seen as *adequate* because a typical stormwater program can be financed with payments below what the normal customer is willing to pay.

In APWA's training manual *Designing and Implementing an Effective Stormwater Management Program*, developed with the assistance of the EPA, there is a comparison between these two mechanisms:

	General Fund Revenues	Stormwater Utility
Political Acceptance	Many competing programs for a resource limited by the will of the elected officials to impose taxes.	Required community support and the political will to create a new funding source based on fees.
Equity or Cost/Benefit	Impacts only those who pay GF revenues sources, and is not related to the cost of services.	Fee for services received and imposed on all those who contribute to need for services.
Feasibility	Already in place in most communities. Need political will.	Requires mechanism for billing fees and administering utility.
Easy to Administer	System in place to manage General Fund.	Once rate base and billing file is created, relatively easy to maintain.
Legal Structure	Typically allowed and functioning already.	Need to verify that authority exists, and if not, authority must be obtained.
Funding Level	Must compete with other priorities of the organization and can be used for operating and capital costs.	Dedicated source of funds for program, allowing the use of fees for debt payment, operating costs, and capital improvements.
Dedicated to Program	Must compete for funds.	Dedicated to program.

Recognizing the need to have a stable funding source, several hundred communities have successfully implemented stormwater utilities across the nation. Supplemented with revenues from inspection fees, plan review fees, bonds, developer participation and assessments, a utility can provide a strong and stable source of revenue that will provide the means to meet the demands of the Phase II NPDES program goals as well as provide relief to the General Fund for those programs currently drawing on those resources. That can even mean a tax cut, depending on the strategy and will of the political body.