

## Trends in Managing Stormwater Utilities

**F**aced with rising costs and requirements to manage urban stormwater, many communities are exploring the concept of the “stormwater utility.” In this method of stormwater financing, property owners are charged a modest fee for “using” the storm drain network, which is usually based on the amount of impervious area located on their property. In most cases, the fees are piggybacked on local water utility bills. The fees collected are used to finance capital and operating expenses needed for local stormwater management. Stormwater utilities are particularly attractive to communities subject to Phase 1 or Phase 2 of EPA’s NPDES municipal stormwater permitting program.

Stormwater utilities can provide a new and reliable source of dedicated funds in an era of local budget austerity. The American Public Works Association considers stormwater utilities the “most dependable and equitable approach available to local government to finance stormwater management.” Relatively unknown a decade ago, stormwater utilities are now an important funding mechanism for several hundred cities and counties across the country.

Black & Veatch, a national environmental engineering firm, has recently completed its 1995-1996 comprehensive survey of stormwater utilities throughout the nation. The survey included 97 different utilities from 20 states. The populations served by the utilities ranged

**Table 1: The Index of Stormwater Utilities —  
A Profile of Trends Among 97 U.S. Stormwater Utilities  
(Black & Veatch, 1996)**

Feel public information/education is essential to success of a stormwater utility .....	61 %
Consider it unnecessary .....	1
Devote more than 2% of operating budget to public education .....	57
Use impervious cover as basis for user fees .....	55
Charge between \$2 and \$4 per month .....	57
Bill on a monthly basis .....	74
User fees included in water or other utility bill .....	35
Revised user fees in the last year .....	35
Revised them (fees) upward .....	89
Credits given if private detention/retention practices exist .....	57
User fees were legally challenged .....	16
User fees were sustained after legal challenge .....	60
Stormwater utility is less than 5 years old .....	55
Stormwater utility covers both capital and O&M costs .....	81
Utility revenue meets most needs or at least most urgent needs .....	82
Utility revenues adequate for all needs .....	11
Property owner responsible for user fee payment .....	65
Water shut off and/or property lein for nonpayment .....	54
Unusually heavy rain and/or floods created major troubles .....	11

from 5,000 (Fort Meade, FL) to 3.5 million people (Los Angeles, CA), and the area served varied from 4 to 989 square miles. This survey provides valuable information for urban water managers that are either considering establishing a stormwater utility or have already done so. A partial “index” of some of the more interesting results of the Black & Veatch survey is provided in Table 1.

A critical lesson learned in developing stormwater utilities is the need for careful planning. It is extremely important to establish a comprehensive plan stating the goals of the utility and the steps needed to achieve the goals *before* initiating charges. Determining what aspects of stormwater management will be covered by the utility charges is also an important first step. Utility revenues cover one or more of the following: operations and management, planning, and/or capital improvements.

Public involvement is essential before and after the implementation of a stormwater utility. Communities often help determine financing and rate issues, define general policy and recommend service levels. Educating the public can also keep legal challenges at bay. If meaningful public involvement is provided, there is much less chance that the community will feel that a “rain tax” has been imposed on them. In general, legal challenges are rare (16% have faced legal challenge and most challenges were not sustained).

The general consensus seems to be that stormwater utilities provide an adequate source of funding for many stormwater management needs (Table 2). However, according to Black & Veatch’s survey, these fees are usually not sufficient to meet all stormwater management requirements. Only 11% of the respondents reported that their fees were adequate to meet all stormwater management needs, while 44% stated that fees only provide funding for their most urgent needs. So, while user fees are helpful they are not a cure-all for funding stormwater management. It’s best to couple this source with other funding methods.

### Key Steps for Creating a Successful Stormwater Utility

For those communities contemplating designing a stormwater utility, the following five steps should be included (Mussman, 1994; Lindsey, 1988). Keep in mind that public involvement is beneficial throughout the process.

#### *Step 1: Estimate revenue requirements*

Cost estimates should be developed for all functions the utility will undertake. Costs vary greatly among communities, often depending on the range of activities performed by the utility. Some utilities apply user fee revenues to operations and management, to planning, and financing capital improvements. Others use rev-

enues only for operation and management costs and rely on the general fund for covering other expenditures. Accurate identification of revenue requirements are crucial for both the development of appropriate charges and legal defensibility.

#### *Step 2: Determine an administrative structure for stormwater management*

Planning for a stormwater utility often begins with a “functional requirements study.” Such a study involves determining the scope of activities needed to manage stormwater and identifying the administrative departments best suited to perform each task. Utilities are generally operated by or within the Department of Public Works (DPW), although this is not always the case. A common arrangement is to have the DPW responsible for planning and design, and operations and management, with the Department of Finance responsible for billing.

#### *Step 3: Devise a fee structure and a billing system*

Devising a fee structure and developing a billing system may represent a significant percentage of start up costs and may be the most time consuming aspect of establishing a utility. This is especially the case when extensive digitizing or mapping is required. There are a variety of methods that may be used to analyze the customer base pervious and impervious area within a community (Table 3). Which tools are used depends on their availability.

When determining billing rates there are a variety of considerations, ranging from whom to charge to what costs will be covered by user fee revenues. Three common billing methods involve adding stormwater charges to another utility bill, adding the charges to property tax bills, or creating a new and separate billing system. Each method has its advantages and disadvantages.

**Table 2: Activities Financed by Local Stormwater Utilities (Black & Veatch, 1996)**

Stormwater Program Activity	% of Respondents
Street sweeping	85 %
Public education	80
Erosion/sediment control	78
Stormwater quality management	71
Household toxin collection	67
Illegal discharge detection	59
Storm drain stenciling	58
Commercial/industrial regulation	45

**Table 3: Resources Used to Determine Customer Base**  
( Black & Veatch, 1996)

Resource	% of Respondents
Property tax assessor records	49 %
On-site property measurement	41
Aerial photographs	38
Planimetric map take-offs	23
Geographic Information Systems	20
Other ( e.g., building permits, site plans)	13

**Table 4: Most Effective Public Education Efforts**  
(Black & Veatch, 1996)

Method	% of Respondents
Bill inserts	47 %
Public schools	11
Brochures/flyers	11
Public hearings/presentations	11
Direct mail	10
Speakers bureau	9
Newspaper	8

In most cases, the property owner is responsible for the fees, but in some cases the resident is responsible. Streets, highways, undeveloped land, rail rights-of-way, and public parks are exempt in most communities. A local government should also determine whether it will provide billing credits for properties which limit their impact on the storm sewer system because they have structural stormwater practices. Black & Veatch suggests providing credits or waivers only when structural stormwater practices exceed building code requirements so that properties that utilize structural practices that don't meet code requirements will be charged, although only in proportion to the level of runoff they produce.

User fee rates depend on revenue requirements and the size of the stormwater management facility. Among survey respondents the average monthly residential charge is approximately \$2.50 with rates ranging between \$10.98 in Sacramento, CA, to \$.24 in St. Louis, MO. A majority of the rates fall between \$1.00 and \$5.00 per month with 50% of respondents setting their monthly fees between \$2.00 and \$4.00.

#### *Step 4: Implement a public information program*

Only 1% of the respondents in the Black & Veatch survey said that public information programs were not

necessary. Public involvement during and after the establishment of a stormwater utility is key to its successful implementation. Communities often help determine financing and rate issues, define general policy, and recommend service levels (Table 4).

#### *Step 5: Adopt stormwater utility ordinances*

Prior to the implementation of a utility, a local government must verify state statutory authority before adopting legislation that specifies the scope of the utility's activities and how it will be financed.

#### **Summary**

The number of stormwater utilities continues to multiply as communities confront the substantial costs associated with stormwater management programs. The experience of communities that have successfully implemented stormwater utilities underscores the importance of public education and involvement. It should be initially assumed that the public are unaware of the impact of stormwater runoff, or the role they play in maintaining watershed quality. At the same time, it should be assumed that once educated, the public will be discriminating in the services and programs they expect to be delivered from a new stormwater utility.

—JL

#### **References**

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