Developing a stormwater management utility

Hector J. Cyre
President
Water Resource Associates, Inc.
Kirkland, Washington
Reprinted with permisson from APWA Reporter, March 1987.

SETTING UP A UTILITY for stormwater management and financing may create controversy in your community. It will change the way citizens pay for stormwater services and facilities. Financial impact will be enough to provoke political and legal challenges. The process and products involved in' establishing a stormwater-management utility must be geared to such potential challenges.

Most legal challenges to stormwater utilities focus on these questions: What makes storrnwater management a utility? Does the stormwater utility rate structure meet the standard tests applied to utility rates? Are charges fair and reasonable and do they bear a substantial relationship to the cost of providing services and facilities? Did the process used in examining and implementing the concept meet legal and procedural requirements?

Many legal issues can be preempted effectively through a thoughtful, rigorous, and well-documented program analysis and development process. The process should include a careful examination of local problems, needs, resources, and constraints; identification of goals; and definition of a program and financing strategy. Strategy should be based on specific functional requirements of the proposed program.

Recent state supreme court decisions in Washington and Colorado indicate that the courts consider the analytical study and program development process to be critical, especially in determining if the local jurisdiction acted in a reasonable or arbitrary manner. Both decisions support the prerogative of local governments to determine their own methods of managing and financing stormwater management- as long as those methods are not unconstitutional, biased, arbitrary, or discriminatory, and decisions are derived thoughtfully.

Potential political challenges to a stormwater utility are more diverse, subjective**,** and difficult to predict accurately in any given jurisdiction. In many states, stormwater utilities are established and rates set through the authority of the elected council or commission without a ballot issue. This is a common point of irritation among ratepayers, who have mounted political, actions in opposition to stormwater service charges

Both political and legal challenges can be minimized with proper planning. The first question any elected official will ask is "How much will it cost?" Costs of developing and implementing a stormwater management utility depend on many decisions and may vary significantly. Each city's local situation and ability to do some or all of the program development and implementation in-house may affect costs.

Setting up a utility is fairly specialized work. Local jurisdictions often retain a consultant familiar with the process. Regardless of whether a consultant is hired, direct staff involvement is highly desirable since they will inherit the program and funding methods.

Program development is, primarily analytical, providing a basis for decisions by officials. Implementation involves creating and assembling information, support, and operating systems required to activate utility funding and a stormwater program. Most short-term implementation work is associated with development of a master account file and billing mechanism for service charges. Full program implementation typically requires several years.

There are two types of costs in this process - lump-sum and unit-based. Most costs related to program development are lump-sum expenses. It costs about the same to conduct a proper analysis and define an appropriate program whether a city has a population of 750,000 or 75,000. Implementation costs are a combination of lump-sum and unit expenses, with the pertinent units being the number of properties in the jurisdiction that are subject to service charges. Most program development expenses are for professional services. A realistic range for program-development costs is $75,000 to $300,000.

Implementing stormwater-utility financing includes preparation of a master account file and billing subfile. Data must either be generated or obtained from other sources. Computer systems, bill delivery, payment-handiling capability, and accounting must be readied by modifying existing systems or developing new ones. Some professional services may be needed for implementation but most expenses are unit costs. Typical cost ranges are $50,000 to $150,000 for professional services and $3 to $10 per account to prepare the master account file, billing subfile, and support systems. Generally, unit cost should not exceed $6 if the rate structure is designed properly.

It is very important to bear in mind the additional revenue created by a stormwater utility. Development and implementation costs typically represent between six and 12 weeks of the revenue stream to be generated by the utility. This is a rather small price to achieve the long-term benefit of'stable utility funding for a stormwater program.

No single stormwater utility concept or rate structure works in every community. One process that has worked well for several cities emphasizes local conditions. Typical tasks in this process include:

- Identify problems and needs
- Define goals
- Determine resources and constraints
- Analyze functional requirements
- Define program and financing strategy
- Conduct rate-structure analysis to determine preferred rate concept
- Conduct detailed rate study and cost of-service analysis of the preferred rate concept
- Determine system and support needs
- Design master account file and billing subfile
- Implement support system

Cities and counties often set up stormwater utilities in response to public pressure after severe storms or floods. Political pressure typically focuses on construction of capital improvement projects to correct visible, often localized problems. Such pressure is not conducive to the lengthy process needed to set up a long-range program and financing strategy. Depending on the involvement of public officials and the public, the process requires 16 to 24 months to develop programs and another 6 to 10 months to implement a master account file and billing system.

The transition to utility status is an important timing issue. Costs of development and implementation usually must be funded from a city or county general fund until a stormwater utility is established formally. At that time the utility can become the funding source - at least on paper. About two-thirds of the program development usually must be spent before it is appropriate to establish a utility. However, nearly all implementation costs, notably the development of master account files, billing systems, and data assembly, can be funded as utility expenses through this approach.

Thus it is advisable to establish a utility formally as early in the process as is practical and appropriate. A utility can be established after completing a program and financing strategy, at which point the basic feasibility of utility funding has been determined. Establishment can also take place after a rate structure analysis which results in

selecting a preferred rate concept. This allows the costs of preparing detailed rate information and conducting a cost of-service analysis to be treated as utility expenses rather than general-fund expenses.

Revenue capacity of a stormwater utility depends on the level of charge acceptable for residential properties and rate structure design. Residents tend to judge stormwater service charges in comparative terms, often in relation to charges for water and sanitary sewer services. Most are willing to pay between one-third and one-half as much for stormwater control as they pay for water or sewer services, whichever is less. However, there seems to be an initial psychological ceiling on stormwater charges of $3 per month for residences. For example, if residential water charges average $5.40 per month and sanitary-sewer charges are $9 per month, residents will probably accept a stormwater charge between $1.80 and $2.70 per month (between one-third and one-half of water charges) but they are not likely to accept a charge of $4.50 per month (one-half the sanitary-sewer charge).

Analyzing more than 12 rate structures used by U.S. cities provides a basis for projecting utility revenue capacity. Assuming a city uses a typical stormwater rate structure based on gross area and intensity of development, impervious area (roofs and paving), or percentage of impervious coverage, total (gross) land area of the city may be used to estimate potential revenue.

Revenue generated by existing stormwater utilities ranges from $25 to $205 per gross acre. This broad range can be normalized to adjust for the fact that a city generating $25 per acre might charge residential customers only $1.25 per month, while another city generating $205 per acre may charge residents $4.50 per month. Using normalized data, a city can expect to generate $20 to $45 per acre every year for each $1 per month charged to residences. If a city of 100,000 gross acres-(about 156 square miles) charges residences $2 per month and uses a typical rate structure which charges higher rates to large and more heavily developed properties, its stormwater utility would have an estimated revenue capacity of $4 million to $9 million per year.

Most stormwater utilities initially set residential service charges at $2 per month or less. Many rate structures use a residential flat rate and equate charges to non-residential properties to the charge on residential properties, often by calculating the number of equivalent service units (ESUs) or equivalent residential units (ERUs) on non-residential properties. ESUs and ERUs are surrogates for the average residential charge.

On an equal-area basis, more intensively developed properties typically pay more than residential parcels under a stormwater rate structure. Ratios vary with the specific rate concept, but generally a commercial or industrial property that is 85 % to 95 % covered with rooftop and paving will pay between three and six times what an equal-

sized residential property pays. Many cities use flat rates for residential properties because their impact on the cost of stormwater services and facilities is relatively consistent regardless of lot size. Residential lots are typically 60 % to 75% of all parcels but generate between 25% and 40% of total revenue since non-residential parcels are larger and more heavily developed.

In most cities a stormwater utility has the long-term revenue capacity to support a comprehensive stormwater management program that includes administration, planning, engineering design, routine and remedial maintenance and operations, regulation and enforcement, and capital improvements. Implementation of these elements is normally phased over several years. Some depend on others. For example, drainage master plans must be prepared and individual improvements designed before construction can begin.

Basic stormwater administration, engineering, and reactive maintenance cost about $15 to $25 per gross acre in most cities. In a city of 100,000 gross acres, this indicates that between $1.5 million and $2.5 million is needed for a basic program. Implementing a comprehensive program including drainage master plans, preventive routine and remedial maintenance, and major capital improvements may require $100 or more per gross acre. If a city has a $2 per month residential stormwater service charge and higher charges for non-residential properties, it will likely generate between $50 and $70 per gross acre annually. A comprehensive program could be implemented at that level of funding, but it is equally likely that capital improvement needs might require higher service charges ($3 or more per month per residence and per ERU or ESU) or a separate funding source for capital projects. It generally takes several years to develop the necessary public support to increase stormwater service charges to a sufficient level to fund major capital projects.