Utility Solves Wastewater Problems

Terry Atherton and Thomas Kutz
Reprinted with permission from American City and County

In 1991 Fort Wayne, Ind., found a solution to its stormwater funding problems through establishment of a stormwater utility. These utilities, which are relatively new, are government-operated and regulated and similar to water and wastewater utilities, financed by dedicated-user fees rather than tax revenues.

The city's sewer system, which serves more than 60,000 residential and commercial customers, has more than 600 miles of sewer lines, ditches, open channels and drains that cover more than 68 square miles. Officials determined that $3.5 million per year was needed to build a stormwater utility, meeting the budget for stormwater infrastructure needs for maintenance, salaries, and improvements to satisfy National Pollutant Discharge Elimination System (NPDES) stormwater permit program requirements.

The NPDES permit program, which dictates that cities and counties with populations greater than 100,000 develop stormwater quality management programs, has municipalities searching for funds to finance improvements to their stormwater infrastructures. Municipalities are required to control pollutant discharge to public waters and prohibit non-stormwater from leaving the storm drainage system.

Fort Wayne established its stormwater utility in 1991 by enacting an ordinance that gave the Board of Public Works responsibility for maintaining and operating the city's stormwater system. City staff prepared a cost-of-service analysis and rate study that allowed the development of a rate structure and schedule that is revenue-sufficient, fair, equitable, legally-defensible, and publicly-acceptable.

The city council approved a temporary rate schedule for water and sanitation customers charging flat rates anywhere from $1.94 per month for residential customers to $52.47 per month for industrial customers.

In 1992 a team was selected to lead the four-phase project which includes data assessment and evaluation analysis, strategic issue assessment, a cost-of-service and rate study and billing system development.

Evaluation of existing data sources and billing systems identified the CUBIS billing system, the city's sanitary sewer and water billing system, community and economic development department land-use maps, the Allen County assessor's land-records and auditor's database, GIS maps, aerial photography, stormwater utility ordinance limitations and integration of database files as primary resources for the project.

Interviews were performed in April 1992 to determine the integrity of existing data and the feasibility of integrating data for stormwater purposes. A questionnaire distributed to key city and county sources asked for information on current stormwater operations.

Data such as land-use records; parcel-ownership information; service addresses; billing-system information and graphic data and maps were requested.

The study discussed using the CUBIS billing system, purchasing the assessor's land records database, obtaining quarter-section maps, amending laws to reflect runoff contribution, updating the GIS for impervious area measurement and other issues that needed to be addressed in implementing a billing system.

In order to handle problems, issue papers were introduced to provide a decision-making tool, discussion of critical information and documentation of issues and decisions. Papers addressed rate methodology and alternative selection, water quality, organization and legal framework and other critical or strategic issues identified for analysis in establishment of the utility.

Stormwater charges were included on a consolidated utility bill with solid waste having first priority, stormwater being second in order of payment followed by water and sewer charges. Consolidation of charges proved cost-effective by eliminating the need to establish a separate stormwater billing system. By "piggy-backing" bills the city reduced postage and other associated charges.

Shopping malls, strip centers, office parks, apartments, and condominiums receive a consolidated bill issued to a single entity, either the landlord/manager or management association. The city agreed to allow credits for stormwater control facilities such as pollution-preventing controls and detention basins that were valuable for large businesses and industries.

While credits for single-family residences were prohibited, 100-percent credits for publicly-owned streets and roads were issued. Agricultural land, in excess of five acres was classified as nonresidential property and assigned not less than one equivalent residential unit, the basic unit of measurement for all nonresidential properties.

Analysis of water quality effects on the NPDES and CSO programs were factored in as optional costs in the cost-of-service study, and the cost-of-service analysis was adpted as the base cost of the program.

A Department of Stormwater Management was established to provide administration for the program, and a land-use map pilot project considering cost and utility of digitizing land-use data was conducted.

Revenue projections comparing alternative stormwater rates in conjusction with the projected cost of service were prepared. To copmpare alternative rates, a five-year cash flow analysis was prepared and presented to support rate selection.

The city provided cost-of-service information regarding the operation/maintenance and capital cost, and the project team provided cost-of-service information for the NPDES stormwater costs.

The final phase of the project involved creating an equitable billing system requiring preparation of data to reflect each property receiving a stormwater utility bill. Analysis of property owners, property addresses, water/sewer billing account numbers, county auditor key numbers and master account numbers verified the number of residential and nonresidential properties.

The county auditor's and the CUBIS databases were available for the initial work with the first containing information on property ownership in the county and the second providing billing information for city utility customers.

Information from the CUBIS and auditor's databases was compared to maps and aerial photography to verify ownership, land use, and billing information. Exceptions were made for railroads, corner lot properties, properties that spanned more than one quarter-section map and new development property.

The result of the reconciliation was the development of information that provided up-to-date billing data for all properties within the city limits. In most cases, impervious surfaces were measured directly from the maps. With data reconciled, the city had the information it needed to include stormwater data in its CUBIS billing system and include the stormwater charge as a line item on the bill for water, sanitary sewer and garbage.

Fort Wayne now has a framework for meeting NPDES requirements into the next century and the funds to repair an aging sewer sytem to better control water quantity and initiate new methods of reducing pollution, thusimproving the city's water quality.

This article was written by Terry Atherton, Fort Wayne director of utilities and Thomas Kutz, Woolpert project manager, Indianapolis, Ind.