Credits Bring Economic Incentives for Onsite Stormwater Management

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By establishing credits in its rate structure, a stormwater utility can involve property owners in protecting water quality - and help lower the total cost of stormwater management for the community. Credits are designed to give property owners incentives to implement peak runoff controls and water quality best management practices (BMPs) and properly maintain onsite stormwater facilities.

Credits allow users to choose the least-cost option for their property - pay typical stormwater utility charges, which fund stormwater management services, or implement onsite stormwater management and pay reduced user charges. Credits could also reward those users that go beyond minimum requirements in the local stormwater management code. Some stormwater utilities offer credits for onsite stormwater detention-retention facilities in new developments. Others provide credits to property owners that retrofit older dry detention basins. Credits usually are available only to nonresidential property owners.

Examples of Credit Approaches

The credit approaches of selected utilities are presented below and in the table. Each utility was contacted directly for up-to-date information on its credit approach.

Gainesville, Fla. Gainesville's Stormwater Management Utility reduces monthly fees for nonresidential properties with privately maintained, onsite stormwater management retention systems. The utility's base fee is established according to the property's impervious area and one-half its pervious parking areas. Credits of up to 100% are available based on the volume of onsite retention provided. Detention volume is not considered because that stormwater is discharged. Most credits range from 15% to 35%.

Orlando, Fla. Orlando's stormwater utility provides a lower rate for commercial and multifamily residential properties with onsite stormwater management facilities. Properties with approved onsite retention or detention get a 42% credit on the rate charged per equivalent residential unit.

Wichita, Kan. Wichita's stormwater utility offers two types of credits only for properties with 50 or more equivalent residential units. Up to a 40% credit is available for detention that equals or exceeds the city's new development standards, which are based on a 100-year storm. An 80% credit is available for retention of all runoff from the site. Wichita has not issued any credits, because the standards are difficult to achieve.

Louisville and Jefferson County, Ky. The Louisville and Jefferson County Metropolitan Sewer District (MSD) provides credits primarily for commercial properties with onsite detention for controlling peak flows. The credit amount depends on how the detention basin functions. Basins must be sized for 2-, 10-, or 100-year storms, and limit discharges to predevelopment runoff rates. Credits are available for each type of storm, with an 82% maximum credit if all criteria are met. Currently, MSD is evaluating ways to incorporate stormwater quality measures into its credit approach.

St. Paul, Minn. St. Paul provides a rate of discharge credit for nonresidential properties, which is based on parcel acreage and a standardized peak runoff rate determined for selected land-use classifications. Where the peak stormwater runoff rate from a parcel is limited by onsite facilities such as detention ponds owned and maintained by the property owner, a credit of up to 25% is available. A 10% credit is given for parcels that provide onsite storage for 5-year storms and also limit discharge to a maximum of 0. 11 m^3/ha.s (1.64 ft^3/ac/s). An additional 15% credit is allowed for parcels that provide onsite storage for 100-year storms and limit discharge to a maximum of 0.11 m^3/ha.s (1.64 ft^3/ac/s).

Both new developments and redevelopment projects may apply for the credit. Existing nonresidential properties can retrofit their systems to provide onsite storage for 5-year storms for a 10% credit.

Most credits were provided in the first few years after the program was established. Currently, approximately three to four credits are approved annually. In St. Paul, the credit approach increased the political acceptability of the storm sewer system charge.

Charlotte, N.C. Charlotte provides one or more credits to commercial, industrial, institutional, and multifamily residential properties and homeowner associations that provide stormwater management measures. Eligibility for credits is proportional to the extent that the measures address the impacts of peak discharge, total runoff volume, and annual pollutant loading from the site.

Up to 100% credit is available as follows:

* up to 50% credit for reducing peak discharge from a 10-year, 6-hour storm;

* up to 25% credit for reducing total runoff volume from a 2-year, 6-hour storm; and

* up to 25% credit for reducing annual pollutant loading.

Each credit is conditional on continued compliance with *the Charlotte-Mecklenburg Land Development Standards Manual* and may be rescinded for noncompliance with those standards.

Summary of Credit Options

Utility	Eligible Users	Basis for Credit	Design Storm	Maximum Credit	Typical Credit
Gainesville, Fla.	Nonresidential properties	Volume of onsite retention	25-year, 24-hour	100% of base fee	15%-35%
Orlando, Fla.	Commercial and multifamily residential	Onsite retention or detention	NA	42%	42%
Wichita, Kan.	Properties less than or equal to 50 ERUs	Two credits: volume of detention or retention	1. 100-year 2. Complete retention	1. 40% 2. 80%	Currently no applications
Louisville-Jefferson County, Ky.	Commercial properties	Onsite detention of peak flows	2-year, 10-year, and 100-year predevelopment runoff	82%	Varies with degree of control
St. Paul, Minn.	Nonresidential properties	Onsite detention of peak flows; acreage, peak flows	5-year and 100-year; release limited to (1.64 ft^3/ac/s)	10% (5-year) 25% (100-year)	Varies with degree of control
Charlotte, N.C.	Commercial, industrial, institutional, multifamily, residential, and homeowner associations	1. Peak discharge 2. Total runoff volume 3. Annual pollutant loading reduction	1. 10-year, 6-hour 2. 2-year, 6 hour 3. Reduction in loading	1. 50% 2. 25% 3. 25% Up to 100%	Varies with degree of control
Durham, N.C.	Nonresidential properties	Pollution credits for water quality and quantity controls	State standards for facility design; estimated pollutant runoff efficiency	25%	Few applications received
Cincinnati, Ohio	Commercial properties	Onsite retention	Limit discharge to predevelopment runoff	50%	Credit never used
Tulsa, Okla.	Privately maintained facilities	50% greater detention; maintenance costs of onsite facilities	NA	60%	Varies
Austin, Texas	Commercial properties	Onsite detention; inspection	NA	50%	50%
Bellevue, Wash.	All properties	Onsite detention; intensity of development	NA	Reduction of one rate (intensity of development) class	Varies
King County, Wash.	Commercial properties	Private maintenance	NA	Reduction of one rate class	Varies

Notes: NA= not available; ERUs = equivalent residential units

Durham, N.C. Durham provides up to a 25% pollution credit for selected structural stormwater controls on nonresidential properties. The city first offered credits for onsite retention basins based on the pool volume for retention. Later, the city offered credits for onsite extended detention and extended detention-retention basins based on drawdown time. Currently, the maximum pollution credit goes to standard basin designs that achieve maximum pollutant removal efficiency under North Carolina's performance standards.

For other structural controls listed in the state's standards, the city's pollution credit is linearly variable, with a maximum 25% credit for a removal efficiency of 85% of total suspended solids. The city recently approved the use of sand filters in addition to approved onsite basin designs, but no pollution credits have been established yet for their use. Durham receives few applications for credits.

Cincinnati, Ohio. The city's Stormwater Management Utility offers up to a 50% credit for commercial properties that install onsite retention that goes beyond normal building requirements (that is, discharge is limited to predevelopment runoff levels). However, this credit has never been used in Cincinnati.

Tulsa, Okla. Tulsa's stormwater drainage system service charge incorporates credits for private maintenance of approved onsite detention or retention facilities. The credit amount varies depending on what the estimated cost would be to the city to provide maintenance. The maximum credit is 60%, because approximately that percentage of Tulsa's stormwater utility budget goes to maintenance.

To be approved, an onsite facility must provide at least 50% more detention than required by the city. If an onsite facility is found to be performing inadequately, the property owner must pay the typical stormwater drainage service charge.

Austin, Texas. Austin's Drainage Utility provides a 50% credit to commercial property owners that construct and maintain approved onsite detention facilities. The city inspects these onsite facilities annually to ensure proper maintenance.

Bellevue, Wash. Bellevue's Storm and Surface Water Utility's rate structure classifies each property according to its percentage of developed land. A reduction of one development classification is given for installation and maintenance of approved onsite detention facilities. The approach has worked well to get approved detention facilities built on large residential and commercial plats.

King County, Wash. In King County, any development of parcels with more than 465 m^2 *(5000* ft^2) of impervious area must provide onsite detention-retention. For commercial properties, King County reduces the utility fee one rate classification for

private maintenance of approved onsite detention-retention facilities that are built to code and meet county maintenance standards.

Issues in Establishing Credits

Each utility must consider local stormwater management goals and problems in deciding whether to incorporate incentives in its program. Communities should evaluate whether the proposed charges and credits are likely to promote onsite stormwater management and whether mechanisms are in place to ensure that onsite stormwater management achieves the desired results.

Charges for stormwater management services are generally based only on the quantity of stormwater runoff, even though the adverse impacts of urban runoff are related to both stormwater quality and quantity. To date, few stormwater utilities have based utility charges on runoff quality. In addition, few utilities 'incorporate into their fee structure site characteristics other than impervious area that also affect runoff.

Because of insufficient data and the potentially higher costs involved in implementing a quality-based stormwater utility charge, quality-based credits are not common. However, if stormwater quantity (as measured by the amount of impervious area) is closely correlated with the adverse impacts of runoff related to both stormwater quantity and quality, impervious area may be a sufficient basis for setting charges and credits.

Although credits must be substantial enough to induce the property owner to make changes, their impact on total utility revenues must be examined carefully. An approach that gives large credits for onsite stormwater management could significantly lower a utility's revenues.

Finally, public acceptability and political support are important when establishing a rate structure with or without a credit approach. Key players in utility design and implementation are seldom the key players in local politics. In designing a credit approach, a utility may minimize controversy by developing education and involvement programs that inform and gain the support of local government officials and the public.

Credits Create Choice

Economists have long advocated pollution charges as a way to achieve greater flexibility and economic efficiency m pollution control. If such charges reflect the environmental damage actually caused by polluted discharges, economic theory suggests they can motivate users to choose the least-cost option - paying a pollution charge or implementing pollution control requirements.

Making credits available for implementing onsite stormwater management can create comparable incentives for users and lower the total cost of a stormwater management program. However, additional research is needed to evaluate the efficiency and equity issues associated with credits and stormwater utility charges. Until the economic and data issues of a credit approach are better understood, communities considering such an approach should examine the experiences of utilities already implementing credits to decide whether that approach is appropriate for their own stormwater management goals and problems.

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