CITY OF URBANA, ILLINOIS
DEPARTMENT OF PUBLIC WORKS

ENGINEERING DIVISION

MEMORANDUM

TO: **Mayor Laurel L. Prussing and Members of the City Council**

FROM: **William R. Gray, Public Works Director**
Gale L. Jamison, Assistant City Engineer
Bradley M. Bennett, Civil Engineer

DATE: **March 8, 2012**

RE: **Storm Water Utility Fee Credit and Incentive Program Policy**

Introduction

On October 10, 2011 the Council approved by motion to retain AMEC Earth and Environmental (AMEC) to prepare a credit and incentive program policy report. Attached please find a copy for your review of the stormwater utility fee credits and incentive program policy report prepared by AMEC.

Any questions, comments, or inquiries may be directed to Mr. Gale Jamison or Mr. Brad Bennett at the Public Works Department at 217/384-2385.

Recommended Action

The Public Works Department seeks acceptance by motion of the stormwater utility fee credits and incentives program policy report and its recommendations.

.

City of Urbana Stormwater Utility Fee Credits and Incentive Policy

1 Background

On-site stormwater management on private property utilizing green infrastructure and best management practices can reduce peak stormwater flow rates, total stormwater runoff, and stormwater pollution. To acknowledge the impact that on-site stormwater management can have on the City's stormwater management program costs, the City Council on October 10, 2011 instructed the Department of Public Works to develop a system of credits and incentives for the proposed stormwater utility fee. Council also stipulated that 5% of the anticipated stormwater utility fee revenues ($83,500) would be budgeted for the credit and incentive programs.

Credit programs are a process through which a ratepayer can reduce their total stormwater user fee on a recurring basis, while incentives are one-time disbursements. Both programs are designed to promote on-site stormwater management and educational practices that will improve the function of the stormwater management program citywide. This document provides an overview of the City of Urbana's proposed stormwater utility fee credit and incentive policies.

Properties excluding single family homes and duplexes with direct discharges to the Saline Branch and McCullough Creek would receive a credit because stormwater runoff from that property was not conveyed through City owned stormwater infrastructure prior to discharge. A portion of the City's stormwater management programs costs would still be applicable to properties with direct discharges because of storm sewer system on adjacent City streets used to access the property, the City's stormwater quality permit program costs, and other stormwater management program costs.

2 Applicability of Incentives and Credits

While serving similar purposes, credits and incentives have fundamental differences. As defined above, credits are recurring discounts against stormwater utility user fees that are granted because the ratepayer meets on-site stormwater management criteria specifically identified as reducing costs to the City's stormwater management program. The qualifying activities typically provide either a reduction in peak discharge, a reduction in stormwater runoff volume, a water quality benefit, or some combination of the three. Incentives on the other hand are typically one time disbursements that fully or partially compensate a property owner for partnering with the City to achieve a stormwater management objective. Incentive programs are sometimes available to any property owner, and other times they are open only to single family residential and other properties that may not be eligible to participate in a credit program.

The incentives and credits programs for detached single family residential and duplex properties in Urbana will be different from the program for other properties in that it will include only incentives. Credits will not be available to the individual detached single family residential and duplex properties because it is difficult for these individual properties to have a measurable impact on a city's level and cost of service for stormwater management. Incentive programs that target homeowner control of stormwater runoff using sustainable practices are a reasonable alternative to credit eligibility for those individual ratepayers.

For all other properties, credits and/or incentives may be available.

3 Single Family Residential and Duplex Properties

Incentives are proposed for detached single family residential and duplex properties that install specific practices on their property and maintain them. Incentives would be available for both owner-occupied and

renter-occupied single family residential and duplex properties. There is a maximum level of investment each year for this program and only qualified applicants will receive the incentives. The City will initially allocate up to $20,000 per year for single family residential and duplex incentive programs. Single family and duplex properties will receive incentives based on a first-come, first-served basis until the budgeted funds for that year are exhausted. Depending on participation and demand, the City may allocate additional funds in the future. Properties would be limited to two rain barrels and one other incentive type (rain garden, runoff rate reduction, volume reduction, or water quality) per property for a maximum incentive total of $300. Properties would be eligible for additional incentives after 10 years had passed from hitting the initial $300 incentive limit. The $300 maximum limit would apply to each ten year period of eligibility for a property to receive incentives. The types of on-site practices that will qualify for incentives are summarized in the table below and are described in the following sections.

Single Family Residential and Duplex Incentives

Incentive Type	Incentive Amount
Rain Barrels	$25
Rain Gardens	$250
Runoff Rate Reduction	$250
Runoff Volume Reduction	$250
Runoff Water Quality	$250

3.1 Rain Barrels

Rain Barrels are structures designed to intercept and store runoff from rooftops. Typically a rain barrel has a 55 gallon capacity and is connected to a downspout. Stored water can provide irrigation for a garden or can be released slowly to a lawn. This is an effective stormwater control function if the stored water is emptied between most storms, freeing up storage volume for the next storm.

The City will subsidize a one-time purchase of up to two (2) rain barrels per household at $25/barrel. The rain barrels must be purchased from a pre-approved supplier located in Urbana. The suppliers are identified on the City's website and the rebate is applied at the time of purchase.

3.2 Rain Gardens

Rain gardens are vegetated shallow depressions located near a downspout or low lying areas that utilize infiltration and evapo-transpiration to manage stormwater on-site. Rain gardens reduce runoff, absorb pollutants, and sustain some wildlife.

The City will reimburse residents up to $250 of the costs for constructing a rain garden that is a minimum of 100 sq ft. Rain gardens less than 100 square-feet in size would be eligible for a prorated share of the $250 incentive. There will be only 1 reimbursement per property.

To qualify for a rain garden reimbursement the property owner would have to file an application form and receive City approval of the rain garden plan before its construction. Reimbursement will be made upon verification by City staff that construction was in accordance with the approved plan. Information on rain garden design and construction is provided on the City's website.

3.3 Other Incentives

Single family residential and duplex properties would be eligible for incentives for installing and/or implementing sustainable activities that provide either a reduction in peak discharge, a reduction in stormwater runoff volume, a water quality benefit, or some combination of the three. Examples of other on-site stormwater management activities eligible for the incentive program include: installing a cistern, paving a driveway with permeable pavers, or constructing a green roof. The property owner could be required to submit their plan to the City for review and approval prior to

construction. The amount of the incentive would be 25% of the construction cost for the activity up to a maximum incentive of $250. The City would pay the incentive to the property owner after construction has been completed and the installation is inspected and approved by the City. A single management practice would not qualify for multiple incentives, though separate practices that meet one of the three goals may qualify for incentives.

4 Properties other than Single Family Residential and Duplex

For properties other than detached single family residential and duplex there is proposed both a credit and an incentive program. There are four categories of credits available to this group of properties: 1) runoff rate reduction credits; 2) volume reduction credits; 3) water quality / Best Management Practices (BMP) credits; and 4) direct discharge credits. Because the property owner's user fee is based on not only the direct impact of their discharges, but also the common impacts on the citywide system that is used by the entire community, it has been determined that the maximum credit that will be available to any individual property will be 50%. The 50% maximum may be reached in a number of ways utilizing the four categories of credit.

The stormwater utility budget includes $51,500 per year for the credit program for properties other than detached single family residential and duplex. Unlike the incentive program it is possible to exceed the budgeted amount for the credit program if enough properties qualify to receive credits.

Also available to some of these properties is an incentive program. Some small businesses and multifamily residential developments may qualify for incentives similar to those available to the detached single family residential and duplex properties. The City will allocate up to $12,000 per year for this small business incentive program.

The types of on-site practices that will qualify for incentives are summarized in the table below and are described in the following sections.

Other Property Credits and Incentives

Incentive Type	**Incentive Amount**
Rain Barrels	$25
Rain Gardens	$250
Credit Type	**Credit Amount**
Runoff Rate Reduction	20%
Runoff Volume Reduction	20%
Runoff Water Quality	10%
Education (per 5th grader)	$5
Direct Discharge	50%

4.1 Runoff rate Reduction Credit (up to 20%)

Runoff rate reduction credits are credits that are available to properties that reduce the rate of discharge from newly developed or redeveloped property to a level below the outflow rates required by the *Urbana Subdivision and Land Development Code*. To qualify for this credit the property will have to include not only 100 year flood protection levels in the discharge from developed properties, but also controls for the lower magnitude, more frequent events that can cause significant problems in the stream channels. The qualifying design will be based on controlling runoff from the "first flush" of stormwater runoff, which is assumed to be equivalent to the runoff from a 0.75-inch rainfall event.

Practices that may qualify for this credit include both dry and wet detention and some rainfall harvesting methods, such as bio-retention, pervious pavement, and other practices that include significant storage. Qualification for this credit will require the services of a registered professional qualified to submit design calculations to the City for review and approval.

The maximum credit available for runoff rate reduction will be 20%, based on the fraction of the impervious area that is being treated by the stormwater management practice. The credit will be granted if the applicant can demonstrate that the structures are designed and built to exceed the standards, and if the applicant provides proof that the maintenance program for the facility is up to date and meets the requirements of the maintenance agreement as defined in Article III, Section 21-42, Part E (2) of the Urbana Subdivision and Land Development Code. To remain eligible for this credit, the applicant must demonstrate continued adherence to the maintenance agreement through annual submission of documentation showing that scheduled maintenance has been performed.

4.2 Volume Reduction Credit (up to 20%)

Volume reduction credits are provided for those activities that reduce the total volume of runoff from a property. Volume reduction practices are primarily infiltration or reuse practices. Many of these practices are also referred to as rainfall or stormwater harvesting practices. Rather than allowing the rainfall to simply runoff into a drainage system or receiving water body, the rainfall or runoff is intercepted and stored for a beneficial use, such as irrigation of lawns or plantings, or for non-potable uses such as toilet flushing.

Volume reduction practices can earn up to 20% credit, depending on the fraction of the total impervious area served and the equivalent depth of rainwater or runoff that is either infiltrated or reused. For stormwater runoff volume reduction approaches that are approved by the City, a 4% credit will be provided for every 0.20 inches of rainfall infiltrated or reused.

Volume reduction practices obviously provide a considerable water quality benefit. A practice designed to capture 1.0 inch of rainfall in Urbana would be capturing almost all runoff for 90% of the annual rainfall events, meaning 100% capture of suspended and many dissolved stormwater pollutants for most events, and a significant capture and removal for events exceeding 1.0 inches of rainfall.

Stormwater controls that are constructed with underdrains do not qualify for this credit.

The following sections define a variety of rainfall harvesting and reuse techniques that might qualify for at least partial credit for many sites.

4.2.1 Cisterns

A cistern is a watertight receptacle for holding rainwater. Cisterns are distinguished from wells by their waterproof linings. Modern cisterns range in capacity from a few gallons to thousands of cubic feet, effectively forming covered reservoirs. The water in cisterns can be used for toilet flushing or landscape irrigation. A use for the stored water that drains the cistern would be required.

4.2.2 Rain barrels

Rain barrels, as defined in Section 4.2, are structures (i.e.; drums) designed to intercept and store runoff from rooftops. Typically they can contain approximately 55 gallon of rooftop runoff. Stored water can provide irrigation for a garden or can be released slowly to a lawn. This is an effective stormwater control function if the stored water is emptied between most storms, freeing up storage volume for the next storm. (Note: to store the runoff from 1 inch of rain on a 2000 square foot rooftop would require twenty-three 55 gallon rain barrels).

4.2.3 Bioretention/Rain Gardens

Bioretention is the process in which contaminants and sediment are removed from stormwater runoff. Stormwater is collected into the treatment area which consists of a grass buffer strip, sand bed, ponding area, organic layer or mulch layer, planting soil, and plants. Runoff passes first over or through a sand bed, which slows the runoff's velocity and distributes it evenly along the length of the ponding area. Water is ponded to a depth of approximately 6 inches and gradually infiltrates into the bioretention area or is evapotranspired. Water stored in the bioretention area planting soil exfiltrates over a period of days into the underlying soils. Rain gardens are a bioretention technique.

4.2.4 Flow-through planter boxes

Flow-through planter boxes are stormwater management systems that are exceptionally adaptable and may be used for new build and retrofit developments to meet stormwater regulations and water quality needs. The concept is a curb side box filled with filter media and a plant or plants. As water enters the box it infiltrates through the media to an underdrain. The media and the plant roots remove pollutants from the water as it passes through the box. The box is typically designed to flood when it has collected a design depth of runoff from its contributing area. Excess runoff bypasses the entrance to the box.

4.2.5 Green roofs

A green roof is a roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproof membrane. It may also include additional layers such as a root barrier and drainage and irrigation systems.

Green roofs serve several purposes for a building, such as absorbing rainwater, providing insulation, creating a habitat for wildlife, and helping to lower urban air temperatures and combat the heat island effect. There are two types of green roofs: intensive roofs, which are thicker and can support a wider variety of plants but are heavier and require more maintenance, and extensive roofs, which are covered in a light layer of vegetation and are lighter than an intensive green roof.

4.2.6 Permeable pavement

Permeable pavements are a range of materials and techniques for paving roads, cycle-paths, parking lots, driveways, and pavements that allow the movement of water and air around the paving material. Although some porous paving materials appear nearly indistinguishable from traditional nonporous materials, their environmental effects are qualitatively different. Whether pervious concrete, porous asphalt, paving stones or bricks, all these pervious materials allow precipitation to percolate through areas that would traditionally be impervious.

4.3 Water Quality Credit (up to 10%)

Properties that provide measures to improve the quality of stormwater runoff that leaves the property are eligible to receive a portion or all of the available Water Quality Credit. For those properties that are granted either a runoff rate or volume reduction credit, the Water Quality Credit may be added to those credits, subject to the comprehensive upper credit limit of 50% for the property.

The Water Quality Credit consists of the following components:

4.3.1 Water Quality / BMP Credit (up to 10%)

A credit may be provided to those applicants' properties that discharge a portion or all of their impervious area runoff to structural or non-structural best management practices (BMPs). The

water quality credit will be granted if the applicant can demonstrate that the BMPs are designed to provide a minimum of 75% reduction in total suspended solids (TSS), as measured on an annual basis. Engineering calculations and, if applicable, vendor specifications for manufactured BMPs shall be included with the application to demonstrate the minimum 75% TSS removal efficiency of the BMPs. In addition, in order to be considered for this credit the applicant shall provide an Operation and Maintenance Plan for the BMP(s). The O&M Plan shall provide instructions on proper BMP maintenance; specify a maintenance schedule (i.e. frequency of cleaning, equipment required, means of material disposal, etc.). To remain eligible for the BMP Credit, the applicant must demonstrate continued adherence to the approved O&M Plan through annual submission of documentation showing that scheduled maintenance has been performed.

The maximum amount of water quality / BMP credit that will be provided is 10%. Credit is prorated based on the fraction of the impervious surfaces on site that actually flow through the facility.

4.3.2 Educational Credit ($5 per fifth grade student)

This credit is only applicable to local state-accredited K-12 educational institutions. National studies have shown that programs targeted at these students can be very effective at spreading the messages throughout a household. There are numerous water quality-based education programs that may be adopted by local school systems.

The City will provide a credit to educational institutions on an annual basis at a rate of $5.00 per 5th grade student for providing instruction in accordance with an approved curriculum. Education credits are based on the number of students actually participating in the education curriculum in a school year, not necessarily the entire student population. All instruction curricula for which credit applications are to be submitted must be approved by the City, whether it is a nationally accepted program or a program written by the institution.

4.4 Direct Discharge Credit (up to 50%)

Properties excluding single family homes and duplexes that discharge directly to unincorporated areas or water bodies not maintained by the City exert a lower demand for service on the City's stormwater program than do properties whose runoff must be accommodated by drainage system capacity, planning, and floodplain management. In recognition of that reduction in demand, the City will provide up to a 50% credit to those portions of properties that are contiguous to unincorporated areas that discharge to unincorporated areas or water bodies not maintained by the City (Saline Branch, and McCullough Creek), provided that these discharges do not re-enter city maintained infrastructure or channels downstream.

To receive this credit, the applicant must submit site plans for the property demonstrating which portion(s) of the parcel directly discharges to the unincorporated area. The credit will be based on the fraction of the impervious area that is discharging to the unincorporated areas.

4.5 Small Business/Multi-Family Incentives

Incentives similar to those available for detached single family residential and duplex properties will be made available for small businesses and multi-family residential properties that are too small to effectively participate in the credit program. The City will allocate up to $12,000 per year for this small business incentive program. Those properties will receive incentives based on a first-come, first-served basis until the budgeted funds for that year are exhausted. Depending on participation and demand, the City may allocate additional funds in the future. The two types of on-site practices that will qualify for incentives are the installation of rain gardens and the use of rain barrels so

properties would be eligible for up to $300 in incentives. The rain barrel and rain garden incentives would be in accordance with the guidelines established in Sections 3.1 and 3.2 of this policy.