REQUEST FOR COUNCIL ACTION

Date: 05/05/14
Item No.: 13.c

Department Approval

City Manager Approval

Item Description: Approve Storm Water Credit Program for Properties Exceeding Required Storm Water Requirements

BACKGROUND

The purpose of the Storm Water Credit Program is to encourage city property owners to manage rainwater in ways that help deal with problems arising from storm water runoff in an urban environment. In Roseville, the large amount of impervious surfaces such as asphalt, concrete, roofs, sidewalks, etc., stop storm water from naturally absorbing into the ground. The runoff from these areas transports pollutants like phosphorus, nitrogen, heavy metals, petrochemicals, fertilizer, pet waste and other common chemicals to receiving bodies of water and is a major source of water pollution in urban areas. In an urban environment, the amount of impervious area on a property is the most significant factor affecting the quality and quantity of storm water runoff. By using storm water Best Management Practices (BMPs) property owners can partially duplicate the effect of the open areas and wetlands that provided natural drainage prior to urbanization.

The program establishes separate criteria and credit amounts for Commercial/Industrial Properties and Residential properties.

The City's storm water utility rates are charged either by acre or by lot. Single Family Residential and Duplex properties are charged by the lot and all other uses are charged by the acre. The table below shows the current storm water utility quarterly rates:

Storm Water Base Rate Category	Unit	2014 Quarterly Rate
Single-Family Residential & Duplex	LOT	$11.70
Multi-Family & Churches	ACRE	90.50
Cemeteries & Golf Courses	ACRE	9.10
Parks	ACRE	27.20
Schools & Community Centers	ACRE	45.30
Commercial & Industrial	ACRE	181.10

For Acre based uses, credits are based on the targeted rainfall volumes that can be kept on site. The proposed credit will be based on capturing a 10 year (4.2") or 100 year (7.4") Type II rain event from the desired drainage area. Only the drainage area that is treated will be eligible for credit. This program does not provide credits for practices that are required by a permit or to meet minimum requirements for a land use approval. Practices that go above and beyond the permit are eligible for storm water credits. Property owners that receive cost share funding from a watershed district, state agency, etc., are still eligible for the storm water credit program.

Acre based uses can reduce their annual storm water fee by capturing these targeted rainfall events:

- 10 year, 4.2" event will reduce the annual fee by 25%
- 100 year, 7.4" event will reduce the annual fee by 75%

Lot based uses (residential) can receive up to a 50% credit to their annual storm water fee based on the percentage of their impervious surface they disconnect from the city infrastructure based on the volume from a 1" rainfall. Only the drainage area that is treated will be eligible for credit. This program does not provide credits for practices that are required by a permit or to meet minimum requirements for a land use approval. Practices that go above and beyond the permit are eligible for storm water credits. Property owners that receive cost share funding from a watershed district, state agency, etc., are still eligible for the storm water credit program. The proposed storm water credit rates for residential properties is shown below:

2014 Annual Storm Water Fee		$46.80	
Impervious Area Treated	Credit %	Annual Fee Reduction	Reduced Annual Storm water Fee
25%	12.5%	$5.85	$40.95
50%	25%	$11.70	$35.10
75%	37.5%	$17.55	$29.25
100%	50%	$23.40	$23.40

In both cases (acre based and lot based uses) the property owner will be required to have a Storm Water Permit on file in order to register the Best Management Practice (BMP) that is creating the reduction in storm water runoff leaving the property.

Attached is the proposed storm water credit program that details the proposed credit and also provides some examples highlighting various land uses.

Below is a partial list of storm water BMPs approved for use in the Storm Water Credit Program:

- rain gardens
- pervious pavers
- wet ponds
- dry wells
- sand filters
- filter strips
- infiltration trenches
- green roofs

The installed BMP's will be certified by the property owner, or agent of the property owner, to show that the BMP is still functioning as designed. Certification will need to be provided, at a minimum, every 5 years after the city has approved the project.

This proposed Strom Water Credit Program replaces an outdated storm water credit policy (see attached) that was adopted in 1984 when the original Storm Water Utility Fee was established. That policy allowed up to 100% credit of the storm water fee. Also, the previous policy did not require recertification of the parameters under which the credit was based upon. This revised policy matches current priorities and policies related to storm water management and the capital improvements

necessary to maintain and improve water quality in the region as well as to address ongoing flooding issues.

FINANCIAL IMPACTS

Currently the storm water utility rates are set in December for the upcoming year. The rates are based on projected annual expenses and also anticipated long term capital expenditures, including both projects and equipment.

The implementation of a storm water credit will initially cause the credited amounts to be dispersed among all the properties in the City, which would increase rates slightly as a result. However, the improvements that the credits are based on will ultimately reduce the amount of storm water traveling through the system that the City must maintain, and which the City uses the funds from the storm water utility to maintain. Therefore, if this credit program is successful and we see a significant participation rate, we should see decreases in the actual long term capital expenditures, thereby reducing future storm water utility rates.

POLICY OBJECTIVE

The City's Comprehensive Storm Water Management Plan (CSWMP) establishes several policies and goals related to water quality and flood protection. The overall storm water utility provides funding to meet these goal and policies. The proposed storm water credit provides a reasonable and responsible financial acknowledgement to property owners who exceed the requirements of their responsibilities as it relates to storm water management on their site.

STAFF RECOMMENDATION

Approve the attached Storm Water Credit Program.

REQUESTED COUNCIL ACTION

Approve the Storm Water Credit Program.

Prepared by: Marc Culver, City Engineer;
Attachments: A: Proposed Storm Water Credit Program
B: 1984 Adopted Storm Water Credit Policy

City of Roseville Storm Water Credit Program

Purpose:
The purpose of the Stormwater Credit Program is to encourage city property owners to manage rainwater in ways that help deal with problems arising from stormwater runoff in an urban environment. In Roseville, the large amount of impervious surfaces such as asphalt, concrete, roofs, sidewalks, etc., stop stormwater from naturally absorbing into the ground. The runoff from these areas transports pollutants like phosphorus, nitrogen, heavy metals, petrochemicals, fertilizer, pet waste and other common chemicals to receiving bodies of water and is a major source of water pollution in urban areas. In an urban environment, the amount of impervious area on a property is the most significant factor affecting the quality and quantity of stormwater runoff. By using stormwater Best Management Practices (BMPs) property owners can partially duplicate the effect of the open areas and wetlands that provided natural drainage prior to urbanization.

The program establishes criteria for applying a credit to property owners based on their land use and how the Storm Water Utility is charged to the property. Single Family and Duplex residential properties are charged per lot while all other land uses are charged by the acre.

ACRE BASED PROPERTIES (INDUSTRIAL & COMMERCIAL, MULTI-FAMILY & CHURCHES, CEMETARIES & GOLF COURSES, PARKS, SCHOOLS & COMMUNITY CENTERS)

Acre based properties will receive a credit based on the targeted rainfall volumes that can be kept on site. The credit will be based on capturing a 10 year (4.2") or 100 year (7.4") Type II rain event from the desired drainage area. Only the drainage area that is treated will be eligible for the credit. This program does not provide credits for practices that are required by a permit. Practices that go above and beyond the permit are eligible for stormwater credits. Property owners that receive cost share funding from a watershed district, state agency, etc., are eligible for the stormwater credit program.

Below is a partial list of stormwater BMPs approved for use in the Stormwater Credits Program:

Raingardens, pervious pavers, wet ponds, dry wells, sand filters, filter strips, infiltration trenches, green roofs

The installed BMP's will be certified by the property owner, or agent of the property owner, to show that the BMP is still functioning as designed. Certification will need to be provided, at a minimum, every 5 years after the city has approved the project.

The following credit will be applied to the area treated based on the event captured:

STORM WATER UTILITY CREDIT FOR ACRE BASED USES	
Rainfall Event (inches/24 hr)	Credit %
10 Year (4.2")	25%
100 Year (7.4")	75%

10 year, 4.2" event will reduce the annual fee by 25%
100 year, 7.4" event will reduce the annual fee by 75%

Acre Based Use Example:
In 2014, a 50 acre industrial site is treating rainfall from 17 acres of their site with no discharge to the city storm sewer system. The annual stormwater fee for the 50 acre property is $36,220. Below is the breakdown of the annual reduction in stormwater fees depending on the rainfall that is captured from the 17 acres that is being captured:

Stormwater Credit	% Reduction	$ Reduction
10 year (4.2")	25%	$3,078.70
100 year (7.4")	75%	$9,236.10

LOT BASED PROPERTIES (SINGLE FAMILY & DUPLEX RESIDENTIAL)

Lot based uses receive up to a 50% credit to their annual stormwater fee based on the percentage of their impervious surface they disconnect from the city infrastructure based on the volume from a 1" rainfall. Only the drainage area that is treated will be eligible for credit. This program does not provide credits for practices that are required by a permit. Practices that go above and beyond the permit are eligible for stormwater credits. Property owners that receive cost share funding from a watershed district, state agency, etc., are eligible for the stormwater credit program.

Below is a partial list of stormwater BMPs approved for use in the Stormwater Credits Program:

Raingardens, pervious pavers, wet ponds, dry wells, sand filters, filter strips, infiltration trenches, green roofs

The installed BMP's will be certified by the property owner, or agent of the property owner, to show that the BMP is still functioning as designed. Certification will need to be provided, at a minimum, every 5 years after the city has approved the project.

The following credit will be applied to the area treated:

STORM WATER UTILITY CREDIT FOR LOT BASED USES	
Impervious Area Treated (% of lot)	Credit %
25%	12.5%
50%	25%
75%	37.5%
100%	50%

Example: In 2014, a single family residential property has an annual stormwater fee of $46.80. The property owner adds a raingarden sized to capture the volume from a 1" rainfall. The amount of impervious area they treat as a percentage of their property will dictate the stormwater credit they will receive annually. Below is the breakdown based on the percent of impervious area they capture:

Annual Stormwater Fee		$46.80	
Impervious Area Treated	Credit %	Annual Fee Reduction	New Annual Stormwater Fee
25%	12.5%	$5.85	$40.95
50%	25%	$11.70	$35.10
75%	37.5%	$17.55	$29.25
100%	50%	$23.40	$23.40

ATTACHMENT B

[STORM WATER DRAINAGE UTILITY ORIGINAL POLICY]

CITY POLICY

TITLE

Credits and/or adjustments of municipal storm water drainage fees.

BACKGROUNG STATEMENT

The municipal storm water drainage utility utilizes a fee structure based on the anticipated relative contribution of storm drainage runoff volumes to the storm water drainage system. A parcels contribution is determined by that parcels size and its land use, under the principal that more intensively developed land uses typically have a larger percentage of impervious surface and contribute to much greater volume of water and/or sediment/nutrient loadings to the system.

It is recognized that some parcels, due either to their unique topographic, vegetative, geologic and other characteristics, or the existence and maintenance of onsite storm drainage control, detention, or retention facilities have a hydrologic and sediment/nutrient loading response substantially differently from that of similarly sized parcels of the same land use.

To provide for an equitable assessment of storm drainage fees, based on reasonably expected contribution of flows and sediment/nutrients, provisions need to be made to permit adjustments or credits to the storm drainage fees for those parcels with unique or unusual characteristics.

POLICY STATMENT

The basis of the City of Roseville's storm water drainage fees is the anticipated relative contribution of storm water volumes and sediment nutrient loadings to the storm drainage system from a given parcel. Where unique or unusual conditions exist where the actual contributions of water volume and sediment/nutrient loadings from a given parcel are substantially different from those anticipated by the storm drainage fee structure, the public works director or his designate may adjust or credit the storm drainage fee for said parcel or an appropriate level in accordance with the guidelines specified herein.

PROCEDURE STATEMENT

(1) Property Owner to Provide Detailed Information

It is the responsibility of the property owner or his agent to present to the public works director or his designate, sufficient information concerning a parcels hydrologic characteristics to permit an accurate assessment of the conditions that exist. This information may include, but is not limited to:

A. Site plan showing locations of all buildings and other development relative to lot lines.
B. The total lot area and area of impervious surfaces.
C. Site topography or contours of sufficient detail to ascertain flow directions, rates and volumes.
D. Size, details and/or volumetric characteristics of any drainage control facilities.
E. Hydraulic calculations specifying outflow volumes and rates for various rainfall events.

(2) Adjustments Where Parcel Runoff Is Significantly Different From Land Use Standard

Where the unit runoff generated by a parcel differs from the assigned amount for that land use category by more than 20%, the P.W.D. may adjust the parcels storm water drainage fee in accordance with the following procedure:

a. Calculation of unit runoff for the parcel shall be determined by the methods outlined in the Soil Conservation Service Technical Release No. 55, utilizing a 2" total rainfall amount and antecedent moisture condition II.

b. If calculated unit runoff is shown to differ from the assigned amount for that land use category by 20% or more, the number of assigned REU's for that parcel shall be adjusted by multiplying by the ratio of the calculated unit runoff to the standard unit runoff.

c. A parcels storm water drainage fee shall be subject to increases as well as decreases by this procedure.

d. Because single family and duplex fees are <u>not</u> based upon actual parcel acreage, no adjustments for unit runoff differences will be made for those land uses.

(3) <u>Procedure for Calculation of Credits for Wet Ponds</u>

A parcel may be credited for up to fifty (50%) percent of the storm water drainage fee for on site measures which are owned and maintained by the applicant which effectively reduce the outflow of sediment/nutrients from the site. Credit percentage shall be based on one-half of the actual percentage of sediment removal efficiency, as determined by the following procedure, rounded to the nearest 5%; except that no credit will be given for sediment removal efficiencies of less than 20%.

A. <u>Calculation of Credits for Wet Ponds</u>

a. Determine total site acreage and percent of site that has an improved or impervious surface.

b. Calculate the annual depth of runoff from the following equation:

$$D_r = P\,(.75\,I_m + .15) - 5.234\,(.25 - .1875\,I_m)\,.597$$

Where D_r = annual depth of runoff in inches.
I_m = percent of site impervious area, expressed as a decimal.
P = annual depth of precipitation = 29 inches.

c. Calculate annual volume of runoff in acre-feet:

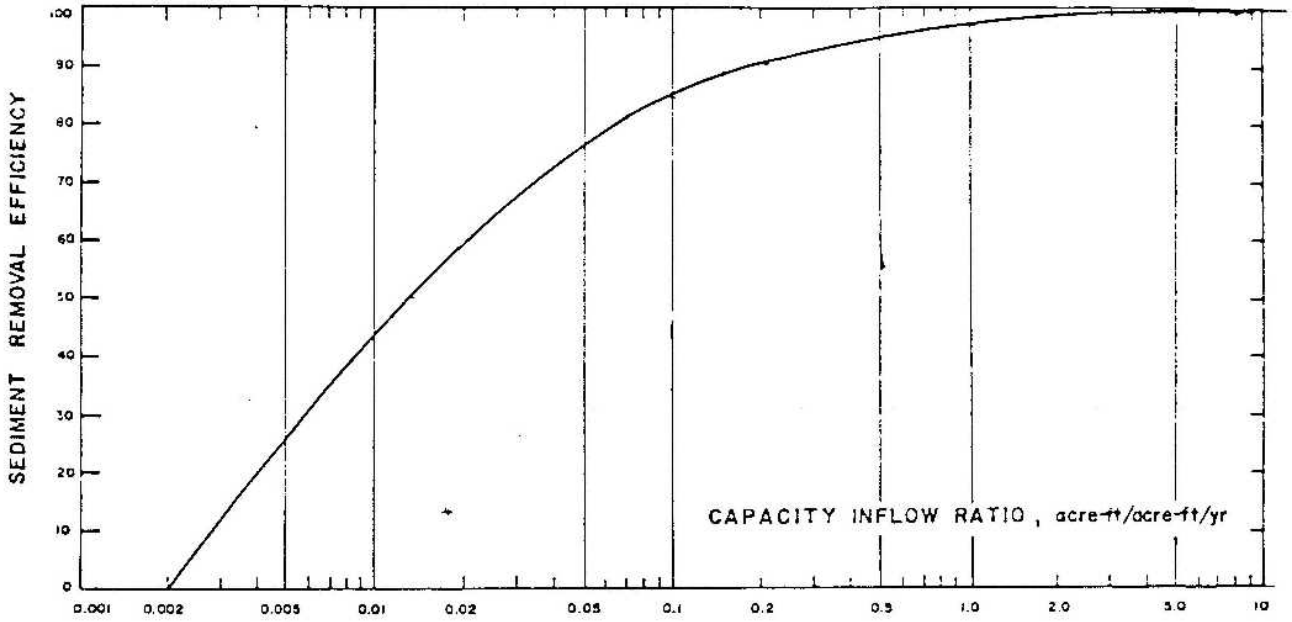
$$V_{annual} = \text{site acreage} \times D_r/12$$

d. Determine pond capacity <u>below</u> outlet elevation in acre-feet.

e. Calculate capacity inflow ratio (CIR), where:

$$CIR = \text{ponding capacity}/V_{annual}$$

f. Read sediment removal efficiency from following graph:



BRUNE'S TRAP EFFICIENCY CURVE

g. Credit = % sediment removal efficiency/2 x storm drainage fee.

(4) Credits for Storm Water Detention:
A parcel may be credited for up to 25% of the storm water drainage fee for onsite measures which limit storm water outflow rates from the site in accordance with the following procedure:

a. 10% credit for parcels which limit peak outflow rates during a 5-year rainfall event to predevelopment rates.

b. Additional 15% credit for parcels which limit peak outflow rates during a 100-year rainfall event to predevelopment rates. (Based on the rational method of runoff analysis. Predevelopment condition shall be considered to have a rational "C" value of 0.2. Time of concentration shall be no shorter than 30 minutes).

c. No detention credits will be given for parcels which do not limit 5-year event outflow rates to predevelopment levels.

(5) Credits Shown in (3) and (4) Above May be Cumulative.

(6) Periodic Inspection and Credit Adjustments.
Public Works Director reserves the right to inspect periodically all storm drainage control facilities to ascertain that they are operating properly. If such a system, due to improper maintenance or other reason, fails to detain or cleanse storm water runoff in an effective manner, the director may eliminate or reduce water quality or detention credits to an appropriate level. Any such facility shall not be eligible to apply for storm drainage fee adjustments for a period of 12 months following any credit adjustment. Credit adjustments shall not be made retroactively.

The issuance of any building permit or other action which changes or intensifies an existing land use shall be cause for an adjustment of storm water drainage fees to an appropriate level.

AUTHORITY
Section No. 74 of the Roseville City Code.

PUBLIC WORKS PROCEDURE
STORM DRAINAGE CREDITS
March 27, 1984

BACKGROUND

In January of 1984, the Roseville Council adopted a storm drainage utility, together with City policy allowing for adjustments or credits to storm drainage fees. The following procedure shall be used to calculate these credits to assure consistent application to all situations.

CREDITS

A. LAND USE INTENSITY CREDITS

1. Criteria: When unit runoff generated by a parcel differs from the assigned amount by more than 20%, parcel drainage fee is to be adjusted to reflect actual runoff.

2. Required information by applicant"
   a) Complete site plan.
   b) Site area and percentage of "improved" surface.

3. Calculate Procedure:
   a) Calculate unit runoff by SCSS method; using actual percent improved surface, 2" rainfall, Soil Group "B", Antecedent Moisture Condition.
   b) Compare with "Standard" Unit Runoff.

Land Use	"Standard" 2" Runoff
Single family	.24"
Cemeteries & golf courses	.09"
Developed parks	.18"
Schools & community centers	.30"
Multiple & churches	.56"
Commercial/industrial	1.24"

   c) If calculated unit runoff differs from standard by 20% or more, adjust parcels REU value by ratio of actual unit runoff to standard unit runoff.

4. Exceptions:
   a) No adjustments to single family parcels, as their fees do not depend on lot size or intensity.
   b) For parcels with drainage easements, reduce parcel size to non-easement area, then calculate unit runoff.

B. RATE OF DISCHARGE CREDITS

1. Criteria: When peak runoff from site is limited to pre-development levels by on-site facilities owned and maintained by property owner, up to 25% reduction in drainage fee can be granted.

2. Required information by applicant:
   a) Complete site plan.
   b) Area of site draining to each outlet point.
   c) % improved surface draining to each outlet point.

d) Specific details about outlet facility(s).
e) Calculation of peak outflow rate for 5-year and 100-year design rainfall, using modified rational method with t_c of 30 min. or more.

3. Calculation Procedure.
   a) Divide site into areas which drain to each drainage outlet.
   b) Select design rainfall.
   c) Route rainfall through pond using modified rational method. Choose t_c at least 30 min., and use "C" Value from Rossmillers Equation Graph. Determine peak outflow rate by summing all areas.
   d) Check other rainfall events to determine "worst" case.
   e) Calculate pre-development rates for parcel using "C"=.20 and assuming no on-site retention.
   f) If peak 5-year outflow less than predevelopment--10% credit.
      If peak 100-year outflow less than predevelopment--additional 15% credit.

4. Exceptions, Special Cases.
   a) Off-site water drains to outlet--owner has right to drain this water through his site without detention. Grant credits if he provides sufficient control for <u>his portion</u> of the total flow.
   b) Outlet facility owned by city or others--No Credits. (See Criteria B)
   c) Shared Ponding Situation: All ponds have an outlet. If outlet is on another's land, no credits (as in b) above), <u>except</u> if the pond level is <u>normally below</u> outlet, (requires historic documentation) this case, if <u>no</u> overflow occurs in a 5-year event, parcel gets 10% credit. If <u>no</u> overflow occurs in 100-year event, additional 15% credit.

C. <u>WATER QUALITY CREDITS</u>

1. Criteria: When a parcel provides on-site treatment facilities which function to improve the quality of runoff exiting the site, up to 50% of the drainage fee may be credited depending of treatment effectiveness.

2. Required information by applicant:
   a) When treatment facility is a "wet" pond.
      (1) Area of site draining to pond and percent impervious.
      (2) Volume of pond <u>below</u> outlet elevation.
   b) When treatment facility not a pond, applicant to furnish sufficient documentation to ascertain the effectiveness of the facility in removing suspended solids.

3. Calculation procedure for wet ponds:
   a) Divide site into areas draining to each outlet or facility.
   b) Calculate the average annual runoff for each area using the following equations:

$$D_r = P\,(.75\,I_m + .15) - 5.234\,(.25 - .1875\,I_m)^{.597}$$

Where Dr= annual runoff depth
P= annual rainfall= 29 inches
I_m= % improved, expressed as a decimal

   c) Calculate annual runoff volume (V annual) =<u>Dr</u> x area acreage.

d) Calculate or verify pond volume in acre-feet below outlet elevation.
e) Calculate, capacity-inflow ration (CIR)
CIR-pond volume/V_{annual}
f) Read sediment removal efficiency from Brune's Trap Efficiency Curve (See policy).
g) Calculate total site efficiency by proportioning the efficiency of each area, and adding together.
h) Calculate credit:
Credit= site efficiency/2 x REU value x current rate.

4. Exceptions and special cases.
   a) Off-site water drains to treatment area--Ignore effects of off-site water in calculating pond efficiency.
   b) Parcel shares ponding facility. If parcel has water normally ponded on site, calculate volume of pond on that site below outfall. Then calculate credit per normal procedure.

D. OTHER CREDITS

Where, in the opinion of the staff, the above procedures do not result in an appropriate storm drainage charge, the Public Works Director has the authority to make adjustments consistent with the intent of the storm drainage utility.

AUTHORITY

- Drainage, Chapter 74, Storm Water Drainage Utility, adopted January, 1984.
- City Policy, Credits and/or adjustments to municipal storm water drainage fees, adopted January, 1984.