Adopted 2004

City of Marysville

STORMWATER MANAGEMENT PROGRAM

CREDIT MANUAL

CITY OF MARYSVILLE
STORMWATER MANAGEMENT PROGRAM
CREDIT MANUAL

SECTION I. OVERVIEW AND GENERAL INSTRUCTIONS

INTRODUCTION

A stormwater credit is a reduction in a portion of your stormwater service fee available if you complete qualifying activities that reduce the impact of stormwater generated from your property or reduce the City's cost to maintain the public stormwater system through your property. Authority for the stormwater credit is found in City of Marysville Codified Ordinances Section 937.22.

Credit is given for two types of activities:

- Reducing the peak flow of runoff from your property through the use of stormwater detention or retention; called the **peak flow credit;** or
- Performing your own maintenance on the part of the public, open channel stormwater system that goes through your property, called the **maintenance credit**.

DEFINITIONS

"Credit" means a reduction in a customer's stormwater service fee, other than single family, given for certain qualifying activities which reduce either the impact of increased stormwater runoff or reduce the City's costs of providing stormwater management.

"Detention Facility" means a facility, by means of a single control point, which provides temporary storage of storm water run off in ponds, parking lots, depressed areas, rooftops, buried underground vaults or tanks, etc., for future release, and is used to delay and attenuate flow.

"Retention Facility" means a detention facility that maintains a permanent pool of water as well as having peak flow reduction capability.

"Routing" means an engineering technique described as computation of the movement and attenuation of an inflow hydrograph as it passes through the stormwater system, resulting in a discharge hydrograph at the downstream end of the element, such as a pipe, channel, or detention basin, and accounts mathematically for the effects of storage on flow through the element. "Level pool routing" assumes that a retention/detention facility maintains an "even" or "level" surface water elevation.

"Stormwater" means stormwater runoff, snowmelt runoff, and surface runoff and drainage.

GENERAL POLICIES

There are certain conditions that must be met and applications that must be made which determine qualification for a credit and for what amount of credit.

- In no case, for on-site activities, will the total credit amount be more than 50% of the stormwater fee.
- A right-of-entry or easement, as applicable, must be given to the City in order for a credit to be approved.
- Credit is given to all eligible non-single family properties only.
- Credit applications must be in the proper form and complete.
- Stormwater credit for retention/detention will be given retroactive to the inception of the stormwater fee for all complete credit applications received within six months from the inception of the utility fee.
- Credit applications for new construction may be submitted once the facility is in place or stormwater billing begins, whichever is later.

See specific policies under each type of credit for details and special circumstances. Section II of this document gives instruction and examples for the peak flow credit and Section III gives instructions for the maintenance credit.

BASIC PROCEDURES

In order to receive certain levels of credits, some engineering calculations and applications are required to be performed by a registered professional engineer. Some applications can be filled out by any property owner. The basic procedure is to pick up an application packet; perform the necessary analysis; fill out the application and submit the required information. The City will institute the credit after approval of an application.

A **peak flow** credit can be one of two types (see Section II for details):

- A ***minimum*** peak flow credit of 25% of the service fee can be obtained by having a stormwater detention facility which was required by City standards, functions as designed, and filling out the proper application form and paying the applicable fee. The City will perform necessary inspections and check the calculations and institute the credit.
- A ***calculated*** peak flow credit of up to 50% of the service fee requires additional engineering analysis performed at the owner's expense.

A **maintenance** credit is available for non-single family property owners who perform regular maintenance on the public open drainage system located on their property. This results in a cost savings to the City.

Property owner activities eligible for a credit include providing a site plan, maintenance plan and annual report. Details can be found in Section III.

SECTION II – PEAK FLOW CREDIT

INTRODUCTION

The purpose of this section is to acquaint the applicant with the procedures of applying for and receiving a peak flow reduction credit on the stormwater service fees. This section contains step-by-step procedure to follow when applying for a peak flow reduction credit. It also contains a worked example.

POLICIES AND GENERAL INFORMATION

All properties, other than single family residential, are eligible to receive a peak flow credit based on the policies listed below.

Policies

1. All properties, other than single-family residential properties, which have constructed stormwater retention or detention facilities, are eligible for a percentage reduction, or credit, in that property's stormwater service fee.
2. The minimum amount of reduction (credit) available for meeting minimum retention/detention design, construction and maintenance standards is 25 percent. The minimum 25 percent credit will be given to all eligible properties which have constructed a retention/detention facility in accordance with City policy provided; (1) such facility meets design, construction and maintenance standards in effect at the time of construction; (2) for which a complete credit application form (Form 1) has been submitted; (3) there has been provided to the City a signed right of entry (Form 3) by the owner thereof; and (4) there is paid to the City for such property a one-time non-refundable application/inspection fee of $250.00 for the first retention/detention facility and $100.00 for each additional retention/detention facility on the same property.
3. The retention/detention credit is also available beyond the 25 percent reduction under the following conditions:

   The amount of reduction, if any, is based upon the following:

$$P = [(0.8 - (0.3 * (Q_A / Q_T))) * 100]$$

Where: **P** is the percent reduction in stormwater fee to be applied to the property.
Q_A is the actual peak flow determined by calculating the peak flow of a design storm from the retention/detention facility, using the level pool routing technique.
Q_T is the target peak flow from the design criteria as defined in the City's Erosion Control Ordinance, (2-year flow with a C factor of .4)

$$Q_T = C * i_{2yr} * A = 0.4 * i_{2yr} * A$$

Where: **C** is the Rational Method C factor
i_{2yr} is the 2-year frequency peak flow, cfs
A is the drainage area, acres

4. SCS standard methodologies shall be used for all calculations when determining the actual peak flow. The storm must be the appropriate design frequency (10-year for drainage areas less than 10 acres and 100-year for larger areas) and at least 6-hours in duration. The SCS 24-hour storm can be used.
5. The retention/detention credit beyond the 25 percent reduction is available upon successful completion of an application process, and submittal of all necessary engineering calculations, documentation, and proof of required information, signed and stamped by a professional engineer registered in the State of Ohio.
6. The maximum amount of percent reduction (credit) available for reducing discharge from property to zero is 50 percent, but Public Service Department and Engineering Department permission is needed to obtain credit beyond the 25 percent level.
7. Retention/detention credit is available only for those eligible properties whose retention/detention facilities meet City design, construction and maintenance standards.
8. If all requirements and conditions of this section are met, the credit will be applied to the property and become effective under the following conditions:
    - The credit shall be the later of the effective date of submittal of a successful application or the date that stormwater billing for that property begins (provided all requirements and conditions of the rule are met).

PROCEDURES

To apply for the <u>minimum credit</u>:

STEP 1: The owner insures the retention/detention area is properly functioning as designed prior to the City inspection.

STEP 2: The owner sends in a Minimum Credit information form (Form 1), a signed right of entry (Form 3) and a non-refundable fee of $250.00 (for the first retention/detention facility per site with an additional $100.00 for each additional retention/detention facility on the site) to request inspection for detention credit.

STEP 3: The City pulls the site plan (if available). If a site plan is not available, the owner shall have one drawn by a registered professional engineer showing existing conditions, including details of any retention/detention areas.

STEP 4: The inspector checks the retention/detention area and makes some basic measurements to insure the retention/detention area meets minimum design requirements.

STEP 5: If the retention/detention area passes inspection the City calculates the 25% credit. If the retention/detention area fails the inspection, the City provides a letter explaining the failure and steps necessary to qualify for a credit and re-inspection.

STEP 6: The City notifies the owner of the results and credit amount, the effective date and makes the changes to the database.

To apply for the <u>calculated credit</u>:

STEP 1: The property owner or representative obtains a credit application packet from the City.

STEP 2: The owner insures the retention/detention facility is functioning as designed prior to the City inspection.

STEP 3: A professional engineer measures the basic retention/detention area features and performs a level pool routing of the design storm. This gives Q_A. This is compared to a calculated Q_T.

STEP 4: The calculations, signed application (Form 2) including certification, and signed right of entry (Form 3), are submitted to the City.

STEP 5: The City will calculate the credit and may inspect the facility. If the facility fails an inspection, the City provides a letter explaining the failure and steps necessary to qualify for a credit and re-inspection.

STEP 6: The City notifies the owner of the results and credit amount, the effective date and makes the changes to the database.

CALCULATED CREDIT EXAMPLE

The example site is a 7 acre site with a C = .80 and t_c = 10 min. (t_c is the estimated time-of-concentration for the site).

STEP 1: The property owner or representative obtains a credit application packet from the City.

STEP 2: The owner insures the detention basin is functioning and property maintained prior to the City inspection.

- The inlet, outlet, overtopping and all other applicable structures are structurally in good condition and are not clogged or blocked.
- The detention basin is cleaned up to remove all trash, excess vegetation and debris.
- Excess sediment is removed to restore the original basin volume.

STEP 3: The property owner or representative measures the basic retention/detention area features and performs a level pool routing of the design storm. This gives Q_A. This is compared to a calculated Q_T.

From analysis of the retention/detention area topography and outlet structure, stage-storage-discharge tables were created:

Stage (ft)	Storage (ft^3)	Discharge (cfs)
0.0	0.0	0.0
0.5	3.1	4.2
1.0	6.25	6.7
1.5	4,800	10.9
2.0	19,600	12.0
2.5	49,000	12.8

- Level pool routing was conducted using an SCS Type II 6 hr design storm (24 hr SCS is allowable) to determine Q_A. From level pool routing the outlet and the discharge is 12.04 cfs for the 100-year storm.
- Calculate Q_T using the Rational Method and the two-year peak flow for a site with a C factor of 0.4, 1 = 2yr intensity for a specific t_c = 10 minutes. A = drainage area.

Q_T = .4(3.81)(7) = 10.67 cfs

STEP 4: The calculations, signed application (Form 2) including certification, and signed right of entry (Form 3) are submitted to the City.

STEP 5: The City will calculate the credit and inspect the facility. If the facility fails the inspection, the City provides a letter explaining the failure and steps necessary to qualify for a credit and re-inspection.

Calculate the Credit:

Peak Flow Credit % = [(0.8 – (0.3 * (12.04/10.67))) * 100] = 46.1%

STEP 6: the City notifies the owner of the results and credit amount and makes the changes to the user fee charge in the database.

SECTION III – MAINTENANCE CREDIT

Introduction

The purpose of this section is to acquaint the applicant with the procedures of applying for and receiving maintenance cost reduction credit on the stormwater utility fees. This section contains step-by-step procedures to follow when applying for a credit.

Policies and General Information

All properties, other than single family residential, for which the stormwater fee is calculated, based upon impervious area, are eligible to receive a credit based on the maintenance criteria listed below.

Policies

1. All properties, other than single-family residential properties, which maintain public stormwater open channels, are eligible to receive a direct cost reduction (credit) in the property's stormwater service fee.
2. To receive a credit, the property owner must (1) provide to the City a site plan at appropriate scale indicating the open channel(s) proposed to be maintained; (2) provide evidence that the channel meets the definitions of public stormwater open channel; (4) provide evidence of an easement dedicated to the City; (5) provide a statement signed by the property owner releasing the City from any assumed maintenance activities on the open channel; and (6) maintain the open channel to a minimal City standard.
3. Credit is given on the basis of two channel types according to the following table:

Channel Type	Description	Credit ($/lin. Ft./yr.)
Minor Ditch	drains up to 10 acres	$ .30
Feeder Channel & Stream	Above 10 acres drainage area	$ .60

4. If all requirements and conditions of this section are met, the credit will be applied to the property and become effective the date a completed maintenance credit application was submitted.
5. The credit received by the property owner alone or in combination with all other stormwater credits received cannot exceed 50% of a customer's stormwater service fee.
6. The credit shall be in effect for a period of two years from the date of the credit. After the initial application has been submitted and approved, in order to continue receiving the credit, the customer shall, on a biannual basis, submit a statement certifying that the public stormwater open channel is being maintained to the standards included herein.
7. Basic minimum maintenance requirements which stormwater division shall monitor for compliance regarding the public stormwater open channels are:
   - The open channel shall be kept free from any debris, vegetation and material which does or could inhibit the normal flow of water;
   - Any erosion occurring on the open channel shall be repaired, so as to prevent further erosion from occurring; and

- Sediment deposited in the streambed, which inhibits the normal flow of water, shall be removed. The stormwater division shall monitor for compliance.

Procedures

To apply for a maintenance cost reduction credit:

STEP 1: The owner insures that the channel to be submitted for credit is currently in a proper state of maintenance. The owner obtains the appropriate application form – Form 4 (Application).

STEP 2: The owner determines the channel, length(s), location(s), and tributary area(s), and develops a site plan.

STEP 3: The owner determines a basic inspection and maintenance plan to meet basic maintenance criteria and any specific activities necessary to bring the channel to an acceptable level initially.

STEP 4: The owner coordinates with the City to dedicate a permanent easement to the City.

STEP 5: The owner submits the application along with the completed Right of Entry form (form 3).

STEP 6: The City may inspect the channel and verify the current level of maintenance. Based on the inspection and/or application the City will approve or disapprove the credit. If the City does not approve the credit, a letter will be sent to the owner describing the deficiencies and how to reapply for a credit.

Every two years, the applicant shall renew the maintenance credit.

Forms that follow:

Form 1 – Minimum Peak Flow Credit Application Form
Form 2 - Calculated and Extended Peak Flow Credit Application Form
Form 3 - Right-of-entry Form
Form 4 – Maintenance Credit Application Form

CITY OF MARYSVILLE
Form 1 – Minimum Peak Flow Credit Application Form

Instructions:

1. Fill out this form completely. A separate application must be made for each separate property location. One application can be made for multiple stormwater detention/retention facilities to be inspected on the same property. Attach a separate sheet giving detention/retention facility location and description for each additional facility on the same property for which you are requesting inspection. Please insure all detention/retention facilities are in a proper state of repair and maintained.
2. Enclose a certified check or money order made out to The City of Marysville for two hundred fifty dollars ($250.00) for the first detention/retention facility and one hundred dollars ($100.00) for each additional facility on the same property. City staff can assist in determination of the number of facilities.
3. Fill out and attach a Right-of-entry Form (Form #3).
4. Mail completed forms (#1 & 3) and payment to: City Engineer
   City of Marysville
   125 East Sixth Street
   Marysville, OH 43040

Site Location/Development Name: _____
Street Address

_____ **OH** _____
City State Zip Code

Water/Sewer/Stormwater Billing Account Number: _____
Authorized Contact:

_____
Name & Title (Last, First & Title)

_____
Street Address

_____ **OH** _____
City State Zip Code Phone #

Closest Cross Street: _____

Distance & Direction from Cross Street: _____

Side of Street (North, etc.): _____ **Landmark(s):** _____

Description of Facility:
(i.e., pond, parking lot, etc.) _____

I hereby request consideration for a Minimum Peak Flow Credit and further authorize the City of Marysville or their authorized representative to inspect the above identified stormwater facility(ies) for the purpose of investigation for a stormwater service fee credit. I certify that I have authority to make such a request and authorization for this property.

_____ _____
Type or print name Title or Authority

_____ _____
Signature Date

CITY OF MARYSVILLE

Form 2 – Calculated Peak Flow Credit Application Form

Instructions:

1. Fill out this form completely. A separate application must be made for each separate property location. One application can be made for multiple stormwater facilities to be assessed on the same property. Attach a separate sheet giving facility location and description for each additional facility on the same property for which you are requesting credit.
2. Fill out and attach a Right-of-entry Form (Form # 3).
3. Mail the completed forms (#2 & 3) and payment to: City Engineer
   City of Marysville
   125 East Sixth Street
   Marysville, OH 43040

Water/Sewer/Stormwater Account Number: _____

Parcel Identification Number (if known): _____

Site Location/Development Name: _____
Street Address

_____ **OH** _____
City State Zip Code

Authorized Contact:

_____
Name & Title (Last, First & Title)

Contact Mailing Address:

_____
Street Address

_____ **OH** _____
City State Zip Code Phone #

Owner's Representative (Engineer):

Name: _____

Address: _____

_____
City State Zip Code

Ohio Registration Number (PE): _____

I hereby request the City of Marysville review this application for a Calculated Peak Flow Credit. I further authorize the City of Marysville to inspect the above identified stormwater facility(ies) for the purpose of assessment for a stormwater service fee credit. I certify that I have authority to make such a request and grant such authority for this property. The attached information is true and correct to the best of my knowledge and belief. (This form must be signed by the financially responsible person if an individual, or if not an individual by an officer, director, partner, or registered agent with authority to execute instruments for the financially responsible person). I agree to provide corrected information should there be any change in the information provided herein.

_____ _____
Type or print name Title or Authority

_____ _____
Signature Date

STORMWATER FACILITY CALCULATIONS AND INFORMATION

1. **TOTAL SITE CHARACTERISTICS** (Site plan attached as Attachment _____)
Plan # _____

Total Site Area: _____acres
Total Site Impervious Area: _____acres (sum of the three below)

Paved Area: _____ft^2 Roof Area: _____ft^2
Other Impervious Area: _____ft^2 (explain)

2. **TOTAL SITE DISCHARGES** (Calculations as Attachment_____)

Pre-development 2-year Discharge for Residential Development (C = 0.04) = _____cfs.
Post Development 10-year Discharge = _____cfs. (100-year for sites > 10 acres).
Post Development 10-year Discharge with Detention = _____cfs. (100-year for sites > 10 acres).

3. **STORMWATER FACILITY GENERAL INFORMATION** (for items 3-5 attach separate sheet for each facility).

Facility ID:
Facility Location on Site:
Description of Facility
(i.e., pond, parking lot, etc.):

4. **DETENTION/RETENTION WATERSHED CHARACTERISTICS**
(Area delineated as shown in Attachment(s) _____)
All values requested pertain to the drainage area into the Facility being analyzed only, not the whole site.

Runoff Coefficient: _____ (C Factor or SCS Curve Number)
Time of Concentration: _____ min (10 minutes minimum)
Drainage Area to Facility: _____acres
Drainage Area Impervious Acreage: _____acres (sum of the three below)
Paved Area: _____ft^2 Roof Area: _____ft^2
Other Impervious Area: _____ft^2 (explain)

5. **DETENTION/RETENTION FACILITY DATA** (All calculations are at Attachment(s) _____)

Storm Frequency and Duration _____, _____ hrs.
Facility Storage Volume to Overflow _____ft^3.
Inflow Hydrograph Peak Flow _____ cfs Routed Hydrograph Peak Flow _____cfs
Required Storage Volume _____ ft^3
Attach stage-discharge-storage information in tabular form, storage volume calculations, outlet description, overflow description, runoff calculations, and all other pertinent information necessary to perform a detailed review.

ENGINEER'S CERTIFICATION: I hereby certify that the detention/retention facility(ies) has (have) been constructed in substantial conformance with pertinent design requirements and that the detention/retention facility(ies) is(are) in an acceptable state of maintenance and repair. I further certify that these calculations, technical details and information provided reflect accurately the condition of the detention/retention facility at the time of my inspection.

_____ **Seal of P E**
Signature

CITY OF MARYSVILLE

Form 3 – Right of Entry

Hereinafter termed "Owner" and the CITY OF MARYSVILLE, hereinafter termed "City" in consideration of the mutual promises of the Owner and City hereinafter contained, agree upon the following terms for the entry of the City and its representatives as set forth herein upon the real estate hereinafter described:

1. Owner hereby grants to City, its employees, agents, consulting engineers, contractors and other representatives the right to enter upon the above-described real estate on and after _____, 20____, for the purpose of inspection and surveying of retention/detention facilities, review of review of facility layout and impervious area.

2. The City shall, as soon as practicable after completion of the work as above described, cause all affected property of the Owner to be restored to its original condition as nearly as reasonably possible.

3. Owner hereby covenants with City that he/she it/they are the true and lawful owner of the above described real estate and has/have lawfully seized of the same in fee simple and has/have the right and full power to grant this right of entry, which right of entry shall cease to be effective on completion of the above described work.

4. Owner will not charge City rent or other compensation during the period of time City occupies the said real estate for purposes aforesaid under the provisions of this right of entry.

IN WITNESS WHEREOF, the parties have caused their respective names to be signed hereto on the day of _____, 20 _____ .

Witnesses:

_____

_____

"Owners":

_____

_____

Mail the completed form to:

City Engineer
City of Marysville
125 East Sixth Street
Marysville, OH 43040

CITY OF MARYSVILLE

Form 4 – Open Channel Maintenance Credit Application Form

Instructions:

1. Fill out this form completely. A separate application must be made for each separate property location. One application can be made for multiple public stormwater open channels on the same property. Insure channel(s) are properly maintained.
2. Attach a separate site plan showing open channel location, and attach evidence of tributary area, and proof that the ditch or channel is a public stormwater open channel for each separate ditch location on the same property for which you are requesting credit.
3. Attach evidence of an easement dedicated to the City for each ditch for which you are requesting credit.
4. Fill out and attach a Right-of-entry Form (Form # 3).
5. Mail the completed forms (#3 & 4) to: City Engineer
   City of Marysville
   125 East Sixth Street
   Marysville, OH 43040

Site Location: _____
Street Address

_____
City State Zip Code

Authorized Contact: _____
Name & Title (Last, First & Title)

Contact Mailing Address: _____
Street Address

_____
City State Zip Code Phone/Fax

CHANNEL INFORMATION SECTION

Note: Attach separate information as necessary for each separate channel located on the property.

Total number of channels for which I am requesting credit _____

Open Channel ID #: _____

Location on Site: _____

Length of Open Channel: _____ ft. _____

Please attach: 1. A site plan of the site locating the channel.
2. Evidence of the tributary area of the channel.
3. Evidence that the ditch is a public stormwater open channel.

I hereby request consideration for a Maintenance Credit and further authorize the City of Marysville to inspect the above identified stormwater facility(ies) for the purposes of assessment for possible stormwater service fee credit. I certify that I have authority to make such a request and authorization for this property. I further certify that the above information is true and correct to the best of my knowledge and belief. I agree to maintain the above stated ditch to the prescribed criteria stated in the Credit Application Manual and according to the maintenance plan attached. I hereby release the City of Marysville from any maintenance responsibility whatsoever on the above identified channel(s) located on my property. I agree to provide corrected information should there be any change in the information provided herein.

_____ _____
Type or print name Title or Authority

_____ _____
Signature Date