



**STORM WATER MANAGEMENT UTILITY  
CREDIT MANUAL**

**CITY OF ADEL**

DEPARTMENT OF PUBLIC WORKS

Original Adoption  
November 10<sup>th</sup>, 2009

Published and Enacted  
January 14<sup>th</sup>, 2010

## TABLE OF CONTENTS

<b>PREFACE .....</b>	<b>3</b>
<b>Chapter 1: INTRODUCTION .....</b>	<b>4</b>
<b>Chapter 2: CREDIT POLICIES .....</b>	<b>5</b>
<b>Chapter 3: QUANTITY REDUCTION CREDITS.....</b>	<b>7</b>
<input type="checkbox"/> <b>(RRC) 25%</b> Rate Reduction Credit for properties that control post-developed runoff rates for the two (2), ten (10), and one-hundred (100) year design storms to pre-development levels.	
<input type="checkbox"/> <b>(ARC) 10%</b> Additional Rate Reduction Credit for properties which achieve further reduction of post-developed runoff rates for said design storms at least 20% below pre-development levels	
<input type="checkbox"/> <b>(AVC) 5%</b> Additional Volume Credit for those properties which provide at least 20% additional storage beyond what is required for the one-hundred (100) year design storm	
<b>Chapter 4: QUALITY CREDIT .....</b>	<b>9</b>
<input type="checkbox"/> <b>(QLC) 10%</b> maximum Quality Credit, to be granted at a rate of 5% per use of approved Best Management Practices (BMPs). Acceptable use of 2 or more approved BMPs will receive the maximum credit of 10%	
<b>Chapter 5: APPLICATION FORMS .....</b>	<b>10</b>

## **PREFACE**

### **Send Application Forms to:**

City of Adel  
Department of Public Works  
Attn: Storm Water Utility Credit  
301 South 10<sup>th</sup> Street  
Adel, IA 50003

### **For Questions Regarding the Credit Application**

**Contact:** City Administrator  
(515) 993-4525

### **Application Procedure:**

A credit adjustment application must be filed in writing with the City Administrator. The application shall include all necessary information from a registered Iowa Land Surveyor or Professional Engineer to clearly demonstrate the credit(s) sought, pertinent maps and design calculations, e.g. pre-development and post-development runoff rates, storage volumes, etc., and the proposed and/or resulting hydrologic response of the property to rainfall events. Using the information provided by the applicant, the City Administrator shall conduct a technical review of the conditions on the property and respond to the application in writing within thirty (30) days.

Billing adjustments required to implement credits shall be applied retroactively to the date the customer submitted a complete application. Adjustments shall be made by crediting the customer's storm water service charge until any overpayment has been fully repaid. A pending application for credit shall not constitute a valid reason for non-payment of the current storm water service charges.

If the application is found to be complete and accurate, a letter will be sent to the applicant notifying approval of the credit.

Application for any credit is an acknowledgement of the indemnification statement in Chapter 2 of this document and the City of Adel's (City) right-of-entry to inspect and verify the information submitted on said application.

If an application is denied, a letter explaining the reasons for the denial will be provided to the applicant. The applicant has the right to appeal this decision, in accordance with the procedures outlined in Section 161.10 and of the City of Adel Code of Ordinances.

## **CHAPTER 1: INTRODUCTION**

The City Council of the City of Adel, Iowa passed General Ordinance No. 258, which created a citywide Storm Water Utility to provide storm water management activities including the operation and maintenance of the North Raccoon River flood protection system.

The primary revenue source for the Storm Water Utility is storm water service charges to all developed property in the City. Storm water service charges to a property are related to the amount of storm water runoff from the property. Since it is not feasible to directly measure this runoff, the actual charge is based upon the area of impervious area on each property. In general terms, the impervious areas are the portions of the property that shed water during a storm. Typical impervious areas include sidewalks, driveways, roofs, awnings, patios, parking lots and compacted aggregate.

A statistical sampling of residential properties within the City determined that an average developed single-family residential property has 2,800 square feet of impervious area. As a result of rounding up, 3,000 square feet is used as the base billing unit or ESU (Equivalent Service Unit). All properties are given up to 2 (two) times the rounded average, or 6,000 square feet as the basis for the service charge.

The number of ESUs assigned to properties will remain constant unless physical changes are made that alter the amount of its impervious surface area. In these cases, billing changes will be made automatically at the completion of construction. Typically, these changes will be triggered through the building permit process.

The City of Adel has developed a system of credits for storm water service customers who:

- (1) Have facilities or controls in place to temporarily store or treat storm water runoff, thereby reducing the impact on the drainage system. This manual details the policies and procedures applicable to the storm water service charge credit program.

## **CHAPTER 2: CREDIT POLICIES**

It is the City of Adel's intent to encourage sound technical design practices that reduce the negative impact of development on the storm water drainage system through a simple but effective credit system. Properties whose impact on the drainage system is significantly limited or has been effectively reduced through specific controls shall be entitled to a credit adjustment that may be applied to its storm water service charge.

**A. QUANTITY REDUCTION CREDITS** are offered to customers that maintain runoff facilities or controls, such as detention or retention facilities, which significantly restrict storm water runoff rates released from their property. Quantity Reduction Credits shall be conditioned on continuing compliance with the design, operation and maintenance requirements of all the applicable ordinances and codes of the City of Adel, State or Federal Permitting, and this Storm Water Credit Manual.

1. Quantity Reduction (40% Maximum).

A. Rate Reduction Credit – 25% Credit. Storm water facilities that control the post-development peak rate of storm water runoff at the pre-development rate of the two (2) year design storm.

B. Additional Rate Reduction Credit – 10% Credit. Storm water facilities that qualify for a Rate Reduction Credit can also qualify for the Additional Rate Reduction Credit if they reduce the post-development peak rate for the two (2) year design storm by at least 20% of the pre-development flow rate.

C. Additional Volume Credit – 5% Credit. Storm water facilities that qualify for a Rate Reduction Credit can also qualify for an Additional Volume Credit if they provide 20% more storage volume than required for the 100-year design storm. This does not include required freeboard above an emergency spillway.

**B. QUALITY REDUCTION CREDITS** are offered to customers that discharge a portion of the runoff to structural or non-structural best management practices (BMPs) which significantly reduce pollutants in storm water runoff. Quality Reduction Credit is available for structural BMPs that are designed to remove 80 percent or more total suspended solids. A Quality Reduction Credit is also available for non-structural BMPs such as filter strips or natural preservation areas, which provides water quality benefits and / or the possibility of groundwater recharge, thus removing water from the storm water system and improving water quality. Other BMPs may be submitted by the applicant for consideration to receive Quality Reduction Credits.

1. Quality Credit (10% Maximum).

A. Implement Best Management Practice(s) (BMP) – 5% Credit per approved best management practice (BMP). Quality credits will be available to properties where structural or non-structural storm water BMPs are located and which are used to treat storm water runoff, specifically total suspended solid (TSS) loads. Professional techniques such as those published in the Iowa Stormwater Management Manual, or by the U.S. EPA, National Resource Conservation Service, American Society of Civil Engineers, and other professional organizations will be considered. A Quality Credit can also be applied in addition to any approved Quantity Reduction Credits, such as a wet detention pond that is designed to remove at least 80 percent total suspended solids (TSS).

B. Applicants for non-structural storm water BMPs including filter strips and natural preservation areas may be eligible for credit provided the owner's engineer can provide calculations showing removal of 80 percent TSS.

**C. UNIQUE AND SPECIAL CASES** - Where a property owner or customer can unequivocally document and demonstrate through appropriate engineering studies that their property's storm water runoff impact on the storm water drainage system is significantly less than suggested by its assigned (gross) ESUs, the City Council, upon recommendation of the staff, may make adjustments consistent with the intent of the ordinance establishing charges for storm water services.

In special conditions, the City Administrator may, upon a written request for an exemption of fees filed with the City, grant fee payment and collection variances after determining that granting the variance would be in the City's best interest, will improve efficiency, safety and is practical. Upon granting of any variance, the City Administrator shall file notice with the City Council giving reason(s) for the variance.

**D. INDEMNIFICATION** – In consideration for permission to construct or install a storm water improvement/BMP, and by nature of applying for a storm water user fee credit, the applicant is hereby legally acknowledging and agreeing to the following:

- 1) After completion of the construction or installation by Owners and approval by the City, the construction or installation of a storm water improvement/BMP shall remain a privately owned and maintained storm water improvement/BMP, shall not be accepted by the City, and shall not become a part of the maintenance program of the City of Adel Storm Water Utility or the Department of Public Works (DPW). All maintenance responsibility and liability shall be and remain with Owners, their personal representatives, heirs, grantees, successors, and assigns.
- 2) Owners, their personal representatives, heirs, grantees, successors, and assigns shall indemnify and hold harmless the City of Adel its officers, agents, and employees from any and all claims, actions, causes of action, judgments, damages, losses, costs, and expenses (including attorney's fees) arising out of or resulting from the construction, installation, maintenance, or operation of the storm water improvement/BMP.
- 3) This Agreement shall run with the real estate upon which the storm water improvement/BMP has been constructed and shall be binding upon Owners, their personal representatives, heirs, grantees, successors, and assigns so long as the drainage facility and/or improvement or any part of it shall be used by them. This Agreement shall be disclosed upon transfer of real estate. At such time as the storm water improvement/ BMP shall cease to be so used, this Agreement shall immediately terminate.

## **CHAPTER 3: QUANTITY REDUCTION CREDITS – 40 % MAXIMUM**

Quantity Reduction Credits will be available to properties whose peak storm water runoff rate is restricted and controlled through onsite facilities or controls, such as detention and retention ponds, which are privately designed, constructed, and maintained according to City standards and requirements.

### **LEVELS OF CREDIT**

Quantity Reduction (40% Maximum).

- A. Rate Reduction Credit – 25% Credit. Storm water facilities that control the post-development peak rate of storm water runoff at the pre-development rate of the two (2) year design storm.
- B. Additional Rate Reduction Credit – 10% Credit. Storm water facilities that qualify for a Rate Reduction Credit can also qualify for the Additional Rate Reduction Credit if they reduce the post-development peak rate for the two (2) year design storm by at least 20% of the pre-development flow rate.
- C. Additional Volume Credit – 5% Credit. Storm water facilities that qualify for a Rate Reduction Credit can also qualify for an Additional Volume Credit if they provide 20% more storage volume than required for the 100-year design storm. This does not include required freeboard above an emergency spillway.

As explained in Chapter 2, property owners of private storm water facilities, such as retention/ detention facilities, eligible for credit under this chapter may, at their option, apply for the ARC and AVC in addition to the RRC as described above. A property must qualify for an RRC to be able to qualify for the ARC and/or AVC.

### **APPLICATION REQUIREMENTS**

1. *The owner shall supply maintenance information along with their application.*

Any association agreements or contracts for inspection and/or maintenance are required to be disclosed as part of the application. Indicate the schedule for major maintenance that will be performed and how many times per year basic maintenance (such as erosion control and/or mowing) activities are performed. Inspection reports shall be filed with the City every subsequent year, as calculated from the original application date, in order to maintain any level of credit. If a property owner fails to file required inspection reports or if a random City inspection results in failure, the City will send a letter informing the property owner of the required action to avoid revocation of the credits. If the property owner fails to take the required action, the credits will be revoked until the situation is corrected. No retroactive credits will be given during said lapse period. Credits will be restored on the effective date of the submittal of the property owner's acceptable response.

2. *The owner shall supply the following technical information along with their application.*

- a) Conceptual site plan and structural control location diagram
- b) Locations, dimensions and characteristics of all proposed and existing drainage patterns and facilities
- c) Existing and proposed grading and location of all structures, parking, driveways, and other impervious areas
- d) Detailed engineering calculations providing the results of routing the storm runoff for the two (2), ten (10), and one-hundred (100) year storm events through the basin or control, along with comparison to predevelopment runoff rates. Total storage volume calculations and emergency spillway configuration are also required. An Iowa Professional Engineer must certify these calculations.
- e) The sum-total of pre-developed and post-developed runoff rates and volumes from all watersheds *within the property* must be calculated and compared, regardless of the number of natural or constructed watersheds in the property. Control of runoff in only one of the property's watersheds, ignoring all others, will not receive credit. Control of runoff in only one watershed, *which takes into account the runoff from all others*, could receive credit.
- f) Upon completion of construction, as-built data certified by an Iowa Professional Engineer shall be submitted in order to complete the application. The as-built data must verify the capacity of the detention facilities and outlet structures for which the credit has been applied.  
NOTE: Developers are encouraged to apply for all levels of quantity credits on new developments as part of the normal development plan review procedures. The credits, as well as the Storm Water Service Charges, do not go into effect until the construction is complete or upon granting of conditional occupation.

**Credits will not begin until as-built data has been submitted.**

3. *Existing facilities will be eligible for credit as long as they meet the requirements* of the City of Adel Storm Water Ordinance and Construction Standards. In this case, the information required in Nos. 1 & 2 above and any other supporting material shall be submitted for review. Retrofitting of existing structures is also allowed to provide or increase the amount of credit for a property. The process for retrofitting existing structures is similar to that for new developments. As-built data shall be submitted for the existing or retrofitted structure before the credit will be applied.

4. *The owner shall be required to sign a statement certifying that information is correct and acknowledging that the credit determination will be based on information provided. A later determination that the information was inaccurate may result in loss of credit.*



## **CHAPTER 4: QUALITY CREDIT – 10 % MAXIMUM**

E. **QUALITY REDUCTION CREDITS** are offered to customers that discharge a portion of the runoff to structural or non-structural best management practices (BMPs) which significantly reduce pollutants in storm water runoff. Quality Reduction Credit is available for structural BMPs that are designed to remove 80 percent or more total suspended solids. A Quality Reduction Credit is also available for non-structural BMPs such as filter strips or natural preservation areas, which provides water quality benefits and / or the possibility of groundwater recharge, thus removing water from the storm water system and improving water quality. Other BMPs may be submitted by the applicant for consideration to receive Quality Reduction Credits.

1. Quality Credit (10% Maximum).

A. Implement Best Management Practice(s) (BMP) – 5% Credit per approved best management practice (BMP). Quality credits will be available to properties where structural or non-structural storm water BMPs are located and which are used to treat storm water runoff, specifically total suspended solid (TSS) loads. Professional techniques such as those published in the [Iowa Stormwater Management Manual](#), or by the U.S. EPA, National Resource Conservation Service, American Society of Civil Engineers, and other professional organizations will be considered. A Quality Credit can also be applied in addition to any approved Quantity Reduction Credits, such as a wet detention pond that is designed to remove at least 80 percent total suspended solids (TSS).

B. Applicants for non-structural storm water BMPs including filter strips and natural preservation areas may be eligible for credit provided the owner's engineer can provide calculations showing removal of 80 percent TSS.

### **APPLICATION REQUIREMENTS**

1. Multiple BMPs can be listed on one QLC application.
2. Plat of survey certified by an Iowa-Registered Land Surveyor, or site construction plan certified by an Iowa Professional Engineer, indicating the following:
  - a. Location and dimensions of the BMPs on the property
  - b. Watershed breaks across the property
  - c. Layout of impervious surface areas on the property
  - d. Layout of the drainage system on the property, including location and elevations of natural and man-made features
  - e. Sufficient topographic data or elevations to verify general drainage patterns across the property.

**City of Adel, Iowa, Public Works Department**  
**FORM 1 – STORM WATER SERVICE CHARGE CREDIT APPLICATION**

Credits Applied for:     Direct Discharge (DDC)     Quality (QLC)  
(Check all that apply)     Rate Reduction (RRC)                       Add. Rate (ARC)  
    Additional Volume (AVC)

Applicant Information (*Financially Responsible Entity*): (Please print or type)

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Contact Person: \_\_\_\_\_ Telephone: (\_\_\_\_\_) \_\_\_\_\_

Property Owner Information (*If different from above*):

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Property Information:

Property Location/Address: \_\_\_\_\_  
Is this property a single-family detached (SFD) home?  Yes  No  
Parcel Identification Number (PIN): \_\_\_\_\_ Property Size (SF/Acre): \_\_\_\_\_  
Receiving Water's Name (if applicable): \_\_\_\_\_ Impervious Area (SF): \_\_\_\_\_  
Brief Description of Storm Water Facilities at Location (if applicable): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Plan Review Information:

Has this project and its storm water calculations been approved by the City?  Yes                       No  
If Yes, date of final approval of plan and calculations: \_\_\_\_\_  
(If no copy is on file, City will notify Applicant to request a copy.)

If No, provide copies of as-built plans and calculations showing the project meets minimum City requirements.  
Please indicate the review information that you are attaching to this application:

- Sketch Plans/Narratives                       Survey Plat                       Construction Plans                       As-Built Plans  
 Construction Specifications                       Run-off Calculations                       Routing Calculations                       TSS Calculations

Certifications:

The above 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

**The following certification is required for approval of all credits for which a certified technical submission was required:** The above information and the information on Form 2 was prepared either by or under the supervision of myself as the qualified professional and is true and correct to the best of my knowledge and belief.

\_\_\_\_\_  
Type or print name

\_\_\_\_\_  
Professional License Type and Number

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date                                      Phone

**City of Adel, Iowa, Public Works Department**  
**FORM 2 – STORM WATER SERVICE CHARGE CREDIT APPLICATION**  
*(Form 1 must accompany this application form)*

Direct Discharge Credit (DDC)

Total Gross Impervious Area (sf): \_\_\_\_\_ Impervious Area Discharging Direct (sf): \_\_\_\_\_  
 Percent of Direct Discharge (%): \_\_\_\_\_ Percentage of Credit (%): \_\_\_\_\_

Quality Credits (QLC)

BMP #1: Description of BMP \_\_\_\_\_  
 BMP #2: Description of BMP \_\_\_\_\_

Check Here  if you attach additional BMPs for consideration. (Plans, specifications, calculations, or other supporting data should be supplied for each BMP)

Past Visual Inspection Reports attached?  Yes  No

If No, Explain why: \_\_\_\_\_

*(Inquire if you are required to submit a copy of your SWPPP in this case)*

Quantity Reduction Credits (RRC, ARC, AVC)

Pre-Developed **2-year** flow (cfs): \_\_\_\_\_ Designed **2-year** flow (cfs): \_\_\_\_\_  
 Reduction of Flow Provided (cfs): \_\_\_\_\_ Percent Reduction (%): \_\_\_\_\_

Pre-Developed **10-year** flow (cfs): \_\_\_\_\_ Designed **10-year** flow (cfs): \_\_\_\_\_  
 Reduction of Flow Provided (cfs): \_\_\_\_\_ Percent Reduction (%): \_\_\_\_\_

Pre-Developed **100-year** flow (cfs): \_\_\_\_\_ Designed **100-year** flow (cfs): \_\_\_\_\_  
 Reduction of Flow Provided (cfs): \_\_\_\_\_ Percent Reduction (%): \_\_\_\_\_

Is 20% or greater reduction provided in all cases, to qualify for the ARC?  Yes  No

Required Volume of Pond (ac-ft): \_\_\_\_\_ Provided Volume of Pond (ac-ft): \_\_\_\_\_

Elevation of 100-year event (ft): \_\_\_\_\_ Discharge at that Elevation (cfs): \_\_\_\_\_

Elevation of Emergency Spillway (ft): \_\_\_\_\_ Discharge at that Elevation (cfs): \_\_\_\_\_

Additional Volume Provided (ac-ft): \_\_\_\_\_ Percent of Required Volume (%): \_\_\_\_\_

Is 120% or more of the Required Volume provided, to qualify for the AVC?  Yes  No

Credit Summary

<b>Direct Discharge Credit (DDC):</b>	_____ %
Quality Credits (QLC) BMP #1:	_____ % (5%)
BMP #2:	_____ % (5%)
<b>Total Quality Credits:</b>	_____ % <i>(Maximum is 10%)</i>
Rate Reduction Credit (RRC):	_____ % (25%)
Additional Rate Credit (ARC):	_____ % (10%)
Additional Volume Credit (AVC):	_____ % (5%)
<b>Total Quantity Credits:</b>	_____ % <i>(Maximum is 40%)</i>
 <b>Total Annual Storm Water Credit:</b>	 _____ %