Stormwater Utility Feasibility Study
Belvidere, Illinois

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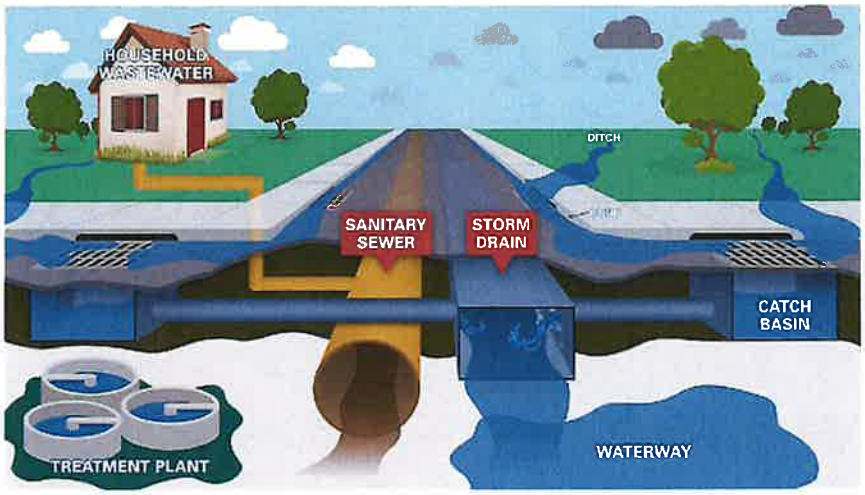
TERMINOLOGY

Stormwater - Water that comes from rainstorms. Stormwater in developed areas (urban areas and neighborhoods) require a collection system in order to provide a safe route for the stormwater to drain away from homes and other infrastructure. For example, inlets, storm sewers, ditches, etc.

MS4 - Municipal Separate Storm Sewer System. The system of stormwater collection structures, storm sewers, and ditches owned and maintained by a municipal entity to convey stormwater to local streams and rivers. See illustration below.



IEPA - Illinois Environmental Protection Agency. This agency regulates storm sewer systems in urban areas. The City of Belvidere is subject to its requirements and currently has a permit through IEPA to discharge its system into the Kishwaukee River and its contributing streams.

Runoff - Any stormwater that does not soak into the ground. Runoff travels from upland areas to waterways.

Impervious Surface - Any hard surface that prevents water from soaking into the ground. Concrete, asphalt, roofs, etc.

ERU - Equivalent Residential Unit. A unit basis of stormwater utility fees. All single-family residential properties are considered 1 ERU. Commercial, industrial, and institutional are assigned ERUs based on the amount of impervious surface on their property relative to a residential property.

1.0 INTRODUCTION

This report documents the work completed by the consultant team of Fehr Graham and Wood Environmental and Infrastructure Solutions as authorized by the City of Belvidere (City). The study focuses on the feasibility of creating a stormwater utility for the City to generate funding for its stormwater management program.

1.1 Need for Stormwater Funding

There are two main reasons the City needs dedicated funding for its stormwater management program. First, the City maintains a Municipal Separate Storm Sewer System (MS4) permit from the Environmental Protection Agency (EPA) in order to be able to discharge stormwater into creeks and streams. Six minimum control measures are required in the following areas; public education and outreach, illicit discharge detection and elimination, construction site runoff control, post-construction run-off control, and pollution prevention/good housekeeping. These MS4 requirements come with a cost to the City. Secondly, the City owns and operates a network of storm sewers and ditches to drain rainfall runoff away from property. This system has been constructed over the course of the City's history, so portions of the storm sewer system are more than 50-years old and are beyond their intended service life. Regulations have since been updated to require larger storm sewer systems that can handle larger storms, so the storm sewers that were installed many decades ago are also undersized.

Currently, the City has an annual budget of $30,000 to maintain its stormwater infrastructure. All stormwater items requiring expenditures are paid for through the general fund.

Stormwater management in the City has recently come into focus as the south side of the City has experienced severe flooding. The City hired an engineering firm to study the flooding problems and recommend solutions, which was presented as a capital improvement program with a total cost of over $40 million. This plan was presented to the City council and the City investigated options to fund the capital improvement program. Two tax increases have been implemented since that time. In July of 2018 the City passed an increase in the gas tax by 2 cents per gallon that is being dedicated to infrastructure improvements and pension costs. In August of 2018 the City passed an ordinance to increase the sales tax within the City by 0.5

percent, which provides funding for City pension costs and infrastructure. Revenue from both of the new taxes is put into the general fund. Though these new tax-based revenue sources provide potential funding for stormwater management projects, they do not designate any proportion of the revenue to stormwater management specifically.

The current situation presents several problems.

- Insufficient Funding for Stormwater Management - Maintaining and improving a network of over 400,000 feet of storm sewer costs more than $30,000 and the availability of monies from the general fund is unknown from year to year.
- Current Spending Ties Up General Fund Monies - Money spent from the general fund on stormwater is money that cannot be spent on other urgent municipal infrastructure needs.
- Not an Equitable System for Generating Revenue - Tax revenues that support the general fund are not based on the burden property owners place on the stormwater systems, so groups of taxpayers pay disproportionate amounts towards addressing stormwater program needs.

For these reasons, the City has chosen to investigate alternative funding methods to pay for its stormwater management program. This report outlines the purpose and need, the estimated rate structure, and implementation requirements for a potential stormwater utility in the City. Based on those findings, a stormwater utility is a feasible option for the City to fund its stormwater management program.

1.2 Stormwater Utility Overview

Communities in Illinois are more commonly creating stormwater utilities to fund their stormwater management programs as federal and state regulations become more demanding and flooding events become more frequent. Treating stormwater as a utility is reasonable, even though most communities have not looked at it this way yet. Stormwater infrastructure systems are the only major utility that are not typically paid for through user fees. Drinking water, sewer service, electricity, natural gas, and telecommunications are all part of established utility programs that charge user fees. Facing a demand for service and uncertain funding, communities have established stormwater utilities to create a sustainable method of funding and managing their stormwater infrastructure.

In general, a utility is responsible for delivering a measurable service to its users. That utility also collects user fees to manage and maintain its system in order to ensure adequate service delivery. When rain falls on properties in a community, runoff flows to its public storm sewers or ditches. These stormwater systems require maintenance, replacement, and upgrades, and are subject to regulatory requirements. Much like sanitary sewer or water utility fees, the fee paid for stormwater infrastructure in a stormwater utility is assessed based on the service provided to the property. Also, like water and sewer charges, the revenue generated from the stormwater utility fee would be placed in an enterprise fund to be used solely for the stormwater management program. See the following examples of how user fees are currently assessed by the City of Belvidere for its utilities and how stormwater utility fees could be assessed in a comparable manner.

- Water Utility Fee
  - Fee per volume of water usage. Base charge unit: HCF (hundred cubic feet)
- Sewer Utility Fee
  - Fee per volume water usage. Base charge unit: HCF (hundred cubic feet).
- Stormwater Utility Fee
  - Fee per amount of runoff. Base charge unit: ERU (Equivalent Residential Unit)

In summary, the creation of a stormwater utility is similar in function to other utilities and stormwater utilities have already been established in many communities in Illinois.

1.3 Legal Basis

The stormwater user fee can be established in Illinois based on Home Rule Powers and Public Works Statutes that empower City government to establish programs to own and operate stormwater management and flood control systems and facilities. These powers and statutes provide authority to fund the programs as well.

The City of Belvidere is a Home Rule community, which generally allows local municipalities to have more autonomy to find local solutions to local problems. The Home Rule Powers allow the City to use fees to finance infrastructure instead of limiting revenue sources to tax levies.

Additionally, the Public Works Statutes legally define the powers granted to municipalities to own and manage various public works infrastructure and programs. Infrastructure defined in the statutes include separate storm sewer systems and all aspects of the stormwater

management program that support them. The funding of the stormwater program and any service debt for bonds for its capital projects are both allowed to be funded by service charges according to the statutes.

Municipalities in Illinois that have implemented service fees for stormwater infrastructure have been challenged in the courts as to whether they have the authority to create such utility fees. Federal courts have defined three basic criteria to distinguish a service charge from a tax. These criteria are:

1. The service being charged for must have a regulatory nature.
    - This is met when an ordinance establishes both a stormwater enterprise fund, a fund dedicated to pay for stormwater management services, and a stormwater utility fee and dedicates its revenue to the stormwater enterprise fund.
2. There must be a rational relationship between the fee charged and the service provided.
    - This is met when the fee being charged is based on the service provided. The basis of the fee needs to be related to the amount of runoff generated from properties. The fees collected then need to be dedicated to the stormwater management program exclusively.
3. There must be a voluntary nature to a fee.
    - The service changes can be said to have a voluntary nature if the mechanism exists to allow the ratepayer to reduce his or her service charge if the ratepayer can significantly lessen the burden of the community to provide stormwater management services on his or her property. This is typically accomplished by including a credit program that is based on meeting specific threshold criteria for on-site stormwater management as defined by the municipality.

The City of Rock Island implemented a stormwater utility in the early 2000s. In 2005, the Church of Peace brought forth a lawsuit, Church of Peace V. City of Rock Island, challenging the legality of the stormwater utility. The Appellate Court ruled that the voluntary nature test was satisfied because the plaintiff had the opportunity to retain or manage stormwater on their property, but they elected to discharge to the drainage systems owned and operated by the City of Rock Island. This was the case of first impression and the Appellate Courts and District Courts found in favor of the City of Rock Island, ruling that the stormwater utility fee is a fee and not a tax. Since that case, other similar cases have appeared in the courts resulting in rulings in favor of the municipalities.

2.0 STORMWATER MANAGEMENT PROGRAM

The City of Belvidere owns and maintains an MS4. Since Belvidere is an MS4 community, it maintains an NPDES permit through the Illinois Environmental Protection Agency (IEPA) that requires a program of controls to ensure discharges to streams are not significant sources of pollution. Streams and rivers in the City can also be sources of flooding that require management as well. The current approach to the stormwater management program is to meet state MS4 requirements and perform basic maintenance activities for the storm sewer system. Recent flooding events, however, have increased interest in taking a proactive approach to managing local stormwater issues.

2.1 Existing Stormwater Management Program

2.1.1 Storm Sewer Operations and Maintenance

The City of Belvidere encompasses 12.7 square miles in Boone County, Illinois. Included in that is over 400,000 linear feet of storm sewer and 23,000 linear feet of ditches and channels the City maintains. Approximately 2,500 inlets bring stormwater into these conveyance systems. More recently developed areas have detention or retention basins, which slow and store water on properties before sending it to the storm sewers or channels described above. Approximately 60 detention or retention basins are located in the City.

The stormwater management system requires maintenance and repair so that it functions properly and lasts through its expected service life. The street department is responsible for maintaining the storm sewer system. There are nine operators in the street department and two mechanics. The street department uses a select group of equipment in its 60 pieces of rolling stock to perform the maintenance and repair for the storm sewer system. This includes pipe repairs and replacement, inlet repairs and replacement, and line jetting for maintenance. All stormwater outfalls and detention or retention areas are inspected annually. Private property owners are responsible for the routine maintenance and repair of detention or retention areas located on their property.

2.1.2 Planning and Capital Improvements

Recent large rainfall events have overwhelmed the stormwater system, resulting in flooding problems. Most recently, heavy rain in July of 2017 caused flash flooding across the City, particularly on the south side of the Kishwaukee River. Flash flooding caused damage to homes and private property and inundated streets. The areas that are most susceptible to

flooding are those that were developed before the 1980s, when modern standards for stormwater management were incorporated into the development process. Since a large portion of the City was developed before this time, much of it is susceptible to flooding during large storm events. The *South Side Stormwater Study*, an engineering study of the flooding problems on the south side of the City, was completed in March of 2018. The study included recommendations for capital improvements to address the deficiencies of the stormwater management system.

2.1.3 Existing Stormwater Management Program

To summarize the stormwater management program expenditures, the spending during the past two fiscal years and the current fiscal year budget were reviewed to assess the current investment in stormwater activities. All expenditures are paid for out of the general fund, which is funded by revenues from property taxes, the local motor fuel tax, the local sales tax, and bond proceeds. The following table details current funding for three categories; maintenance of the storm sewer system, professional services for the study and design of stormwater management, and capital improvements to the storm sewer system. Table 2.1.3 summarizes the budget and expenditures for the last three fiscal years. On average $144,000 is dedicated to the stormwater program.

Table 2.1.3 - Existing Stormwater Program Budget Summary

Stormwater Management Budget	2018	2019	2020	Average
Maintenance	$28,000	$35,000	$30,000	$31,000
Professional Services	$115,000	$59,000	$165,000	$113,000
Capital Improvements	$0	$0	$0	$0
Total	$143,000	$94,000	$195,000	$144,000

Some of the professional services in this year's budget are related to the overall recommended capital improvement program from the *South Side Stormwater Study*. In the

final report for the study, five phases of capital improvements are proposed. The capital improvements that will be constructed in 2020 are Phase 1 and Phase 2 of the plan, the Dawngate detention ponds and Bellwood detention ponds.

Another stormwater management construction project that will take place is the Low Flow Channel at West 6th Street and 13th Avenue. This project provides improved conveyance and erosion protection for a ditch that serves as the outlet for a large urban drainage area.

The current program uses general funds to maintain and improve the stormwater management system that serves properties in the City. This includes compliance with MS4 regulations, replacement of aging or inadequate infrastructure, and development of a program to mitigate the impacts of flooding. Among other stormwater infrastructure needs, the *South Side Stormwater Study* recommends a program that will require increased funding in order to implement.

2.2 Proposed Stormwater Management Program

To determine the amount of funding needed to properly fund the stormwater management program, the following three areas were evaluated.

1. Storm Sewer Operations and Maintenance
2. Capital Improvements
3. Professional Services

2.2.1 Storm Sewer Operations and Maintenance

The proposed operations and maintenance program will continue to maintain the stormwater management system at the current level. The City has stated the current budget appropriated from the general fund for maintenance is adequate.

2.2.2 Capital Improvements

Capital improvements will be the largest expenditure of stormwater funds in the proposed 5-year program presented in this feasibility study. While a specific group of projects has not been identified, the City maintains a list of stormwater capital improvements to be implemented. The total costs of these projects exceed $40 million, which is beyond the available funding to complete within 5 years.

For this feasibility study, it is assumed that the City will expend on average $750,000 in capital improvements each year. To determine the amount of work that will be carried out, a cost opinion for the construction of storm sewer on a typical block in the City was calculated. Within the span of a 5-year program, the equivalent of twelve City blocks, at $275,000 for each block, would be improved.

2.2.3 Professional Services

The proposed program will include professional services for the planning, design, and construction engineering of stormwater projects. Planning includes stormwater master planning and drainage studies. Design is the design and permitting of stormwater capital improvements that have been prioritized. Construction engineering consists of the documentation of construction activities on behalf of the City.

Design will be performed for projects that are identified as priorities for construction. Generally, the design fee for projects is between 10-15 percent of construction costs. For this study, based on the assumed cost of capital improvements, design engineering will be calculated as 10 percent of the construction cost and construction engineering will be calculated as 7.5 percent of the construction cost.

2.2.4 Proposed 5-Year Stormwater Management Program

The three components summarized previously are the items that make up a basic stormwater program. Additionally, the City would include a base fee for all properties based on the staffing and effort required for MS4 permitting and billing of the stormwater utility fee. The staffing position would be responsible for stormwater management tasks including, but not limited to, managing the GIS database of stormwater management infrastructure, completing necessary permitting activities related to the MS4 requirements, and overseeing stormwater management capital improvement projects. The 5-year stormwater program budget is detailed in Table 2.2.4 below. The average budgeted amount per year is $826,100.

Table 2.2.4 - Proposed Stormwater Management Program Budget

Item	2021	2022	2023	2024	2025
Storm O&M	$30,000	$30,000	$30,000	$30,000	$30,000
Prof. Services	$131,250	$131,250	$131,250	$131,250	$131,250
Capital Imp.	$618,750	$618,750	$618,750	$618,750	$618,750
Storm Program	$46,100	$46,100	$46,100	$46,100	$46,100
Total	$826,100	$826,100	$826,100	$826,100	$826,100

3.0 PRELIMINARY USER FEE STRUCTURE

The rate structure for stormwater utilities can be formulated in several ways. The most common methodologies for billing stormwater fees for properties are a flat rate fee for all properties, fees based on zoning designation, fees based on water usage, and an ERU. This section will explore each of those options and then provide a rate model based on an initial analysis of rates using a feasible framework.

A flat rate structure would be the simplest to tabulate and initiate because each property in the corporate limits would be charged the same fee. The drawback to this approach is the fee would not be equitable in terms of the impact properties have on the stormwater collection system. Smaller properties would be paying more than their fair share to provide service to their properties. Another simplified method of billing would be to assign rates for different zoning types, but this would lead to large inaccuracies in rates due to the differences of impervious areas on different properties and the fact that a property can have a land use that does not match the zoning for the property. A fee structure based on water usage is another method but is not recommended because it does not correlate the fee to the amount of runoff generated from the site.

The use of impervious area as the basis of the stormwater fee is the most common method for determining the rate each property pays. This is because impervious area is cited as the most important factor in predicting the impact of runoff from a property. Using impervious area presents some challenges when needing to account for each property's area. Since the City includes over 8,000 properties, defining and keeping records of the amount of impervious area for each property would not be a cost-effective option. Municipalities commonly determine the average or median impervious area of a single-family residential property in their City and make the fee for single-family residential properties a flat rate. This average or median value is determined by measuring the impervious areas on a representative sample of properties rather than individually measuring thousands of single-family residential properties. This representative amount of impervious area is referred to as an Equivalent Residential Unit, or "ERU", and becomes the de facto billing unit for the stormwater fee. Each single-family residential property is then billed 1 billing unit, or ERU.

In an ERU-based rate structure, all non-residential properties would be charged based on their impervious area as a multiple of the ERU. So, a non-residential property with 5-times the amount of impervious area as the average or median single-family residential property would be charged 5 ERUs per billing period.

A rate structure based on impervious area is recommended. It is also recommended that the ERU for the City be determined and used as the billing unit.

A preliminary rate analysis was completed to estimate the rate per ERU that would fund the stormwater program adequately. The City GIS data for City-wide parcels and the 2017 aerial are the basis for the analysis. This analysis included sampling of residential properties to determine the ERU and sampling of other zoning classifications to determine an average impervious rate.

- According to the sampling, the average residential property contained 3,469 square feet of impervious area.
- According to the sampling, the impervious area averages for each land use type are shown in Table 3.0.

Combining these two sampling activities yields a projected number of ERUs for the City. Though the data was generally reviewed for errors and irregularities, the implementation phase will involve a more detailed review of the data that will result in greater accuracy. See Table 3.0 for the summary of the impervious area sampling and rate estimation. The amount of ERUs equals the impervious area divided by 3,469 square feet. Parcels without impervious area are not included in the tabulation. These parcels will still be charged a fee for stormwater, but it will be based on the annual stormwater expenses for all properties within the corporate limits as described in the following section.

Table 3.0 - City of Belvidere Estimate of Equivalent Runoff Units (ERUs)

	1	2	3	4	5
Land Use	Number of Properties	Total Land Area (Acres)	Estimated Impervious Percentage	Estimated Impervious Area (Acres) [Column 2 X Column 3]	Estimated Amount of ERUs [Column 4 / 3,469 SQ FT]
Rural with Building	19	694	16%	111	1,393.3
Residential Lot with Building	6,557	1705	32%	546	6,557.0
Apartment - 6 Units or More	59	61	57%	35	439.2
Commercial	411	559	78%	436	5,474.7
Developer Commercial Land	54	103	0%	0	27.0
Commercial Office	14	14	78%	11	134.4
Industrial	102	822	60%	493	6,194.0
Tax Exempt Excluding Conservation Area	200	587	27%	159	1,991.8
Tax Exempt Conservation Area	19	1410	1%	14	177.0
Total					22,361.3

3.1 Stormwater Base Service Fee

The base service fee will be paid by all property owners within the corporate limits of Belvidere. It is based on the revenue needed to fund staffing for the MS4 permit program and billing of the stormwater utility program. Dividing the annual stormwater program budget, $46,100, by the number of properties, 8,119, equates to a base service charge of $5.67 annually and $0.95 bi-monthly. It is assumed that the base service fee and the ERU fee will be paid bi-monthly.

3.2 Stormwater ERU Fee

Dividing the annual proposed stormwater budget, $780,000, by the total estimated rate base for the City, 22,361.3 ERUs, equates to an estimated user rate of $34.88 per ERU annually and $5.81 per ERU bi-monthly. This estimate could be low for several reasons; it is based on

sampling and actual impervious areas have not been measured, some properties will qualify for credits and will not pay the calculated amount, and collection of fees will not equal the total of fees owed as it can be assumed some property owners will not pay on time. For those reasons a contingency, 10 percent for this study, is added to ensure that the proposed rate is adequately funding the stormwater program. This gives an upper range fee of $38.37 per ERU annually and $6.39 per ERU bi-monthly, which will be paid in addition to the base service charge. A residential property owner would be assessed a fee of $7.34 bi-monthly, which accounts for the base service fee and the ERU fee.

This program assumes that the expenditures for the stormwater management program are being paid out of the stormwater utility fund and not from other City funding methods. An alternative approach would be to augment stormwater utility funding with general fund monies to pay for portions of the stormwater program.

4.0 BILLING OPTIONS

The stormwater utility fee can be billed to property owners within the corporate limits of the City in several different ways. The methods for billing property owners for stormwater are including it in an existing utility bill, including it on the property tax bill, and generating a separate bill.

The most common way to assess the fee is to include it on an existing utility bill. This is favored because of its simplicity and because the bill is already used for other utility fees. The following table details pros and cons for each of the methods.

Table 4.0 - Stormwater Utility Billing Methodologies

Method	Key Comparisons
Existing Utility Bill	Advantages • Billing is already generated • Consistent bill usage • Transparency to payees • Enforcement provisions already in place
	Drawbacks • Certain properties within the corporate limits do not receive utility bills from the City
Property Tax Bill	Advantages • Billing is already generated • Enforcement provisions already in place
	Drawbacks • Leads to the perception that the stormwater fee is a tax • Property owners would likely not review the bill since most are paid from escrow accounts • May require special legislation to put a fee on the property tax bill
Separate Stormwater Fee Bill	Advantages • Highest transparency
	Drawbacks • Additional administrative upfront and ongoing costs • Weaker enforcement provisions

The City has stated it is most interested in using the existing utility bills, specifically the water and sewer bills. The existing billing vendor was inquired about the possibility of adding a stormwater fee to the water and sewer bills, the vendor responded that the stormwater fee could be added into the system. The use of existing utility bills for assessing a stormwater fee is a feasible option for the City.

5.0 RECOMMENDATIONS

The Stormwater Utility Feasibility Study is a comprehensive look at the City of Belvidere's stormwater management program and its funding options. The study combined input from the City and the consultant to evaluate available options and provide recommendations.

The contents of this study and the recommended plan outlined in this section is to be reviewed by the City Council. The City Council will then have the option to vote to accept the findings of the feasibility report and move forward with the implementation phase of the stormwater utility.

The implementation phase will include all the steps detailed below that would be required to create a stormwater utility. After all the items are completed, the applicable stormwater utility ordinances will be sent to city council for approval.

5.1 Summary of Feasibility Study

The study included a number of specific reviews relevant to the potential adoption of a utility fee to fund stormwater management. These included:

1. Assessing the current program and its needs
2. Developing a proposed 5-year stormwater management business plan, including estimation of the program's annual revenue requirements.
3. Evaluating the legal authority to implement a utility fee for stormwater management
4. Evaluation of the available data from which to base a utility rate structure
5. Rate modeling to identify a range of possible rates for the recommended stormwater program
6. Development of a public education and outreach plan for utility implementation
7. Meetings with stakeholders to get initial feedback on the concept

The proposed stormwater management program created in this report for estimating necessary funds for stormwater management will cost $576,100 annually. The rate study to determine the fee per ERU required to pay for the proposed stormwater program yielded a fee of $4.35 bi-monthly per ERU and a $0.95 bi-monthly base service fee. Based on the analyses previously listed it is feasible that a stormwater utility in the City be adopted as outlined in this study.

5.2 Implementation Plan

The following recommendations summarize the stormwater management program and funding approach that uses the creation of a stormwater utility to help meet the stormwater management needs of the City.

5.2.1 Preliminary Rate Structure Recommendations

The stormwater management program and the analysis of the City's properties as it relates to the impervious surfaces completed for this study form the basis for the preliminary rate structure recommendations. The following items are the main recommendations of this study related to the preliminary rate structure:

1. Enterprise Fund
    - The City should create an enterprise fund that will be funded by the stormwater utility fees. This fund will operate similarly to the existing enterprise funds operated by the City for its water and sewer utilities. The enterprise fund will allow the City to dedicate funding to its stormwater program and ensure that stormwater fees collected pay for stormwater management program expenditures.

2. Rate Basis
    - The stormwater utility rate should be based on the demand for service that each property in the service area places on the City's stormwater infrastructure. Impervious surfaces on each property should represent the developed density of each property and its runoff potential, which is the approximation of the demand for service. Based on the analysis of the parcels in the City, the program costs should be based on billing units equal to 3,469 square feet of impervious area. The number of billing units should be rounded to the nearest tenth. The billing units should be referred to as Equivalent Residential Units or "ERUs." In addition to the ERU fee based on the impervious surfaces area, a base service fee will be assessed to all properties within the corporate limits of Belvidere to account for City-wide MS4 permit requirements and the billing of the stormwater utility fee.

3. Estimated Rate
    a. Residential
        - All single-family residential and duplex properties should be billed a single flat rate in the range of $6.39 bi-monthly. The rate will be finalized during the implementation phase, which will define impervious area for all non-single family residential properties.

b. Non-residential

- All other property classes in the City should be billed at a rate of $6.39 per month per ERU.

c. Base service fee

- All properties within the corporate limits of Belvidere will be charged a base service fee of $0.95 bi-monthly.

5.2.2 Credit and Incentive Program

Credits and incentives within the stormwater utility are strongly recommended as they help demonstrate the credibility of stormwater as a utility on a legal basis. A credits and/or incentives program will define the means for reducing the stormwater fee for property owners. A process will be put in place for property owners to apply for and receive a reduction in fees based on performing certain activities on their property. The program should be defined by policy early in the implementation phase.

5.2.3 Appeals Process

Creating a well-defined appeals process is recommended to allow property owners to challenge their assessed rate. Typically, this involves an application to the City by the property owner, the cities response, and any follow-up necessary to rectify billing errors found during the appeals process. A timeframe for responding to requests should be established to ensure a timely response. The appeals program will be defined in the implementation phase and formally included in the stormwater utility ordinance that will be passed by the City to create the stormwater utility program.

5.3 Stormwater Utility Implementation Plan

The feasibility study establishes framework for creating a stormwater utility in the City. An implementation phase completed by the City and the consultant will be necessary in order to establish and initiate a stormwater utility. The main tasks that will be necessary for this phase are listed and described in the following sections.

1. Billing System Selection

   The City will need to decide how it intends to deliver the stormwater utility bills to the ratepayers. The City has discussed using existing water and sewer bills or creating a separate stormwater utility bill. Both billing methods would use the existing vendor for managing and billing stormwater accounts.

2. Stormwater Utility Outreach

The implementation phase should include public outreach activities that engage residents and property owners in several mediums in order to inform them about the stormwater utility and provide a venue for feedback and discussion. A public outreach plan has been created as a part of this study to provide recommendations for goals of the outreach as well as outreach activities. See Appendix 9.

3. Stormwater Utility Enterprise

As described above, the City should create an enterprise for its stormwater utility. The enterprise fund will be dedicated to funding the stormwater management program and will have the stormwater utility fee as a dedicated revenue source.

4. Rate Ordinance

A rate ordinance will need to be established to formally outline the rate structure, appeals process, credit and incentives, and enterprise fund. The rates can be included in the ordinance or can be defined in a master fee schedule. An example of a stormwater utility ordinance can be found on the City of Champaign's stormwater management website: *champaignil.gov/public-works/find-a-service/stormwater-management*.

5. Impervious Surface Database Development

The impervious surface database will need to be developed in order to associate the properties density of development with an ERU. All non single-family residential or duplex properties in the City will need to be digitized in order to account for impervious area existing on their parcel. A database will be kept associating property owners with their respective gross impervious areas on their properties. Some property owners will not be in the billing database of the City's other utilities, so effort will be required to review the data and include all applicable properties. As an example, parking lots are not typically customers of sewer utilities but would be customers for the stormwater utility. A long-term maintenance plan for the impervious surface database will be established during the implementation phase.

6. Master Account File Development

The master account file is the billing database for the stormwater utility. This file may be part of the impervious surface database or it may be a standalone billing file that is delivered to the billing agent on a regular or periodic basis. There are three basic steps to developing the file.

a. Ensure that the data to be exported from this database is an exact match to the billing databases of the billing entity. Stormwater only accounts will need to be set up so that the database is complete.

b. Compute, to the nearest tenth, the number of billing units per parcel by dividing the impervious surface of each parcel by 3,469 square feet.

c. Apply the fee reductions to those parcels' billing unit totals that have applied for and received credits.

The complete master account file will be provided to the billing entity to test uploading the billing file into the billing program. Once verified, the billing file can be put into the billing system to be tested. The billing system operator will produce sample bills for quality control review of the billing program. The information in this database will not change from year-to-year for most properties. A long-term maintenance plan for the master account file will be provided as part of this task.

7. Credit Program Development

The credit program consists of a credit policy, a credit manual, and training for local engineers and developers on how the program works. The credit policy will cover numerous topics including but not limited to who can apply for credits, how much credit they can get, and how they qualify for conditions, step by step instructions, application forms, information on how the owner retains his or her credit from year to year, and information on how to appeal credit decisions. A database of applications and approvals should be kept as information for the master account file. An example of a credit and incentive manual can be found on the City of Champaign's stormwater management website: *champaignil.gov/public-works/find-a-service/stormwater-management*.

8. Program Customer Support

   Designated customer service representatives who work for the City will be trained to answer questions from property owners about their bills. Developing a Frequently Asked Questions guide to aid in the communication of policies and billing information for customers is recommended.

9. Council Action

   The final step during the implementation phase is for City Council to pass the ordinances and approve the initiation of billing of the stormwater utility fee.

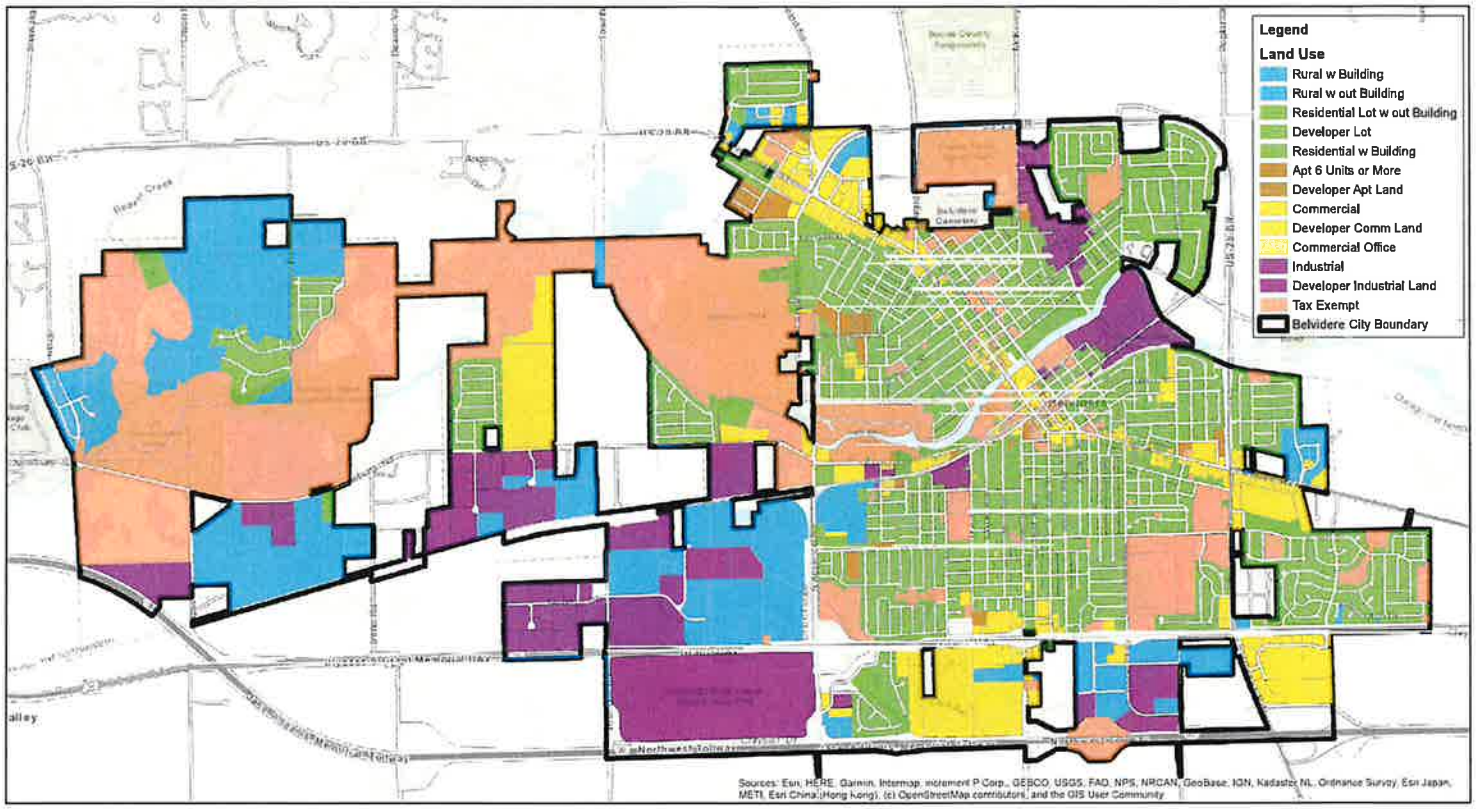
5.4 Stormwater Utility Implementation Schedule

The implementation phase is anticipated to have a duration of 8 to 10 months.

Appendices

Appendix A

Belvidere Land Use Map



0 1,800 3,600 5,400 7,200 Feet

1 inch = 2,333 feet

N

Belvidere Land Use Map
19-573 Belvidere Stormwater Utility Feasibility Study
Belvidere, Boone County, Illinois

O:\Belvidere, City of\19-573 - SW Utility Feasibility Study\GIS\Exhibits
Date: November 1, 2019
Prepared By: J. Macke

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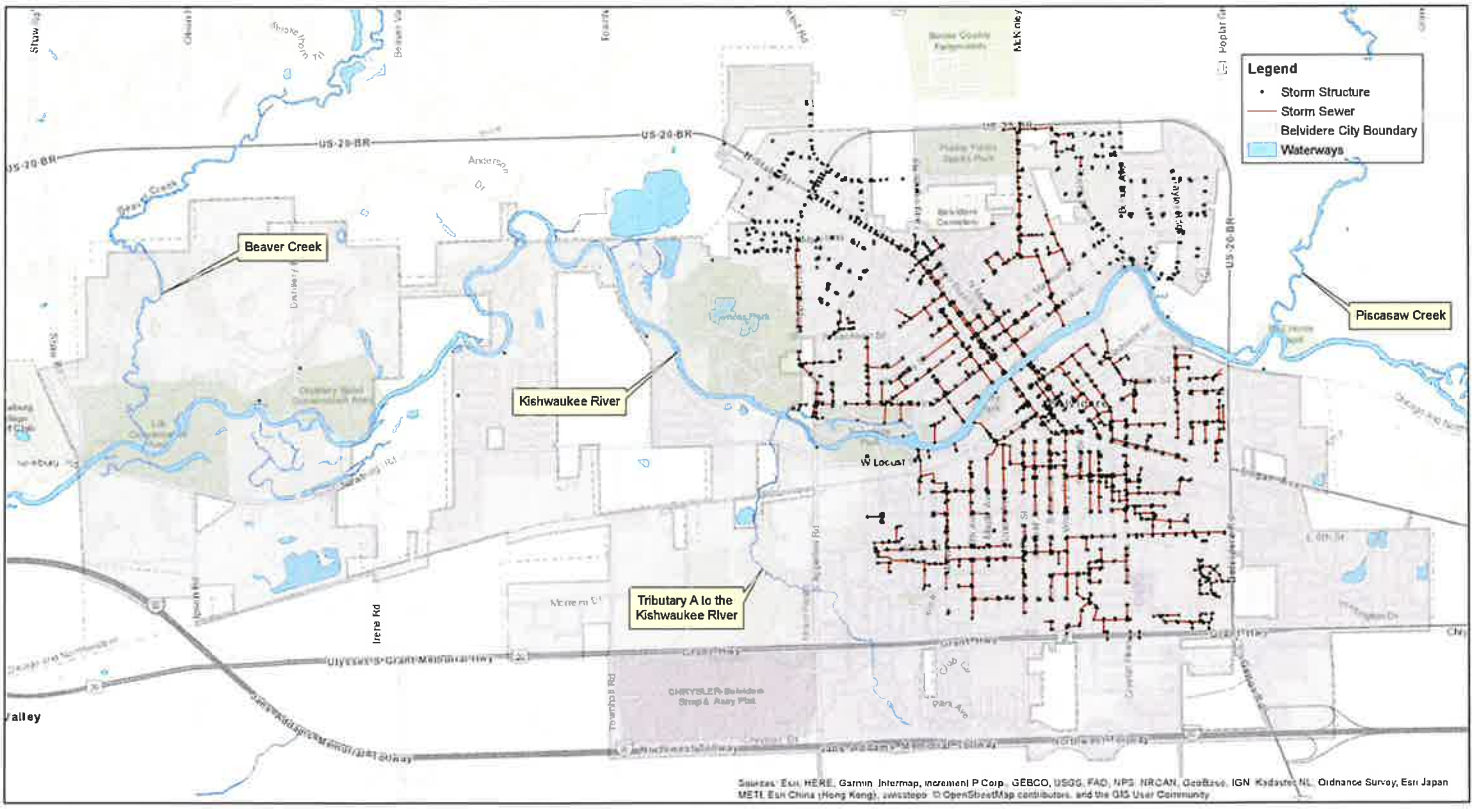
Appendix B

Belvidere Stormwater Infrastructure Exhibit



Note: Storm sewer mapping for the entire City of Belvidere has not been completed. The information displayed is the extent of storm sewers mapped by the City to date.

0 1,800 3,600 5,400 7,200 Feet

1 inch = 2,340 feet

N

O:\Belvidere, City of\19-573 - SW Utility Feasibility Study\GIS\Exhibits\Stormwater Infrastructure
Date: November 12, 2019
Prepared By B. Slone

Belvidere Stormwater Infrastructure
19-573 Belvidere Stormwater Utility Feasibility Study
Belvidere, Boone County, Illinois

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Appendix C

Belvidere Stormwater Expenditures and Budget Worksheets

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL

Belvidere Summary of Past Expenses and Projected Expenses

Date 6/10/2020

Belvidere Stormwater Utility Feasibility Study
FG Project No.: 19-573

Fiscal Year ending April 30, 2020		Breakdown by Category	
Item	Amount	Category	
Storm Drain Repair and Maintenance	$ 30,000	Maintenance	$ 30,000
Stormwater Utility Professional Services	$ 50,000	Design	$ 164,978
Southside Storm Sewer Study	$ 87,499	Construction	$ -
Bellwood Detention Basin	$ 27,479		
		2020 Budget	$ 194,978
2020 Budget	$ 194,978		

Fiscal Year ending April 30, 2019		Breakdown by Category	
Item	Amount	Category	
Repairs and maintenance - storm	$ 34,853.00	Maintenance	$ 34,853
Southside stormsewer study	$ 3,120.00	Design	$ 59,292
Bellwood Pond Design	$ 25,762.50	Construction	$ -
Dawngate Pond Design	$ 8,690.00		
IDOT Pond Design	$ 550.00	2019 Total	$ 94,145
6th Street Low Flow Design	$ 21,169.75		
2019 Total	$ 94,145.25		

Fiscal Year ending April 30, 2018		Breakdown by Category	
Item	Amount	Category	
Repairs and maintenance - storm	$ 27,989.00	Maintenance	$ 27,989
Southside Stormsewer study	$ 87,499.00	Design	$ 114,978
Bellwood Detention Basin	$ 27,479.00	Construction	$ -
2018 Total	$ 142,967.00	2018 Total	$ 142,967

Fiscal Year ending April 30, 2017		Breakdown by Category	
Item	Amount	Category	
Repairs and maintenance - storm	$ 24,633.00	Maintenance	$ 24,633
		Design	$ -
2017 Total	$ 24,633.00	Construction	$ -
		2017 Total	$ 24,633

Fiscal Year ending April 30, 2016		Breakdown by Category	
Item	Amount	Category	
Repairs and maintenance - storm	$ 25,576.00	Maintenance	$ 25,576
		Design	$ -
2016 Total	$ 25,576.00	Construction	$ -
		2017 Total	$ 25,576

Note: Items in blue are budgeted and have not been expended.

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Stormwater Expenditure Line Items

Belvidere Stormwater Utility Feasibility Study Date 8/23/2019
FG Project No.: 19-573

Date	Project/Item	Type	Amount
10/16/2017	Southside Stormwater Study	Prof Serv	$ 1,915.00
10/16/2017	Bellwood Pond Design	Prof Serv	$ 887.50
11/20/2017	Southside Stormwater Study	Prof Serv	$ 11,466.22
11/20/2017	Bellwood Pond Easement	Eas/Acq	$ 1,664.00
11/20/2017	Dawngate Pond Design	Prof Serv	$ 1,650.00
11/20/2017	Detention Easement Appraisal	Eas/Acq	$ 1,800.00
12/18/2017	Southside Stormwater Study	Prof Serv	$ 14,541.08
12/18/2017	Dawngate Pond Design	Prof Serv	$ 4,400.00
12/18/2017	IDOT Pond Design	Prof Serv	$ 1,284.00
1/16/2018	Southside Stormwater Study	Prof Serv	$ 21,934.06
1/16/2018	IDOT Pond Design	Prof Serv	$ 3,628.50
2/19/2018	Southside Stormwater Study	Prof Serv	$ 25,580.87
2/19/2018	IDOT Pond Design	Prof Serv	$ 2,677.00
3/19/2018	IDOT Pond Design	Prof Serv	$ 940.50
4/16/2018	Southside Stormwater Study	Prof Serv	$ 12,061.74
4/16/2018	Detention Easement	Eas/Acq	$ 8,547.00
7/16/2018	IDOT Pond Design	Prof Serv	$ 550.00
8/20/2018	Dawngate Pond Design	Prof Serv	$ 550.00
10/15/2018	Bellwood Pond Design	Prof Serv	$ 575.00
10/15/2018	Dawngate Pond Design	Prof Serv	$ 390.00
1/22/2019	6th St Low Flow Design	Prof Serv	$ 7,056.25
1/22/2019	Bellwood Pond Design	Prof Serv	$ 13,562.50
2/18/2019	6th St Low Flow Design	Prof Serv	$ 4,233.75
2/18/2019	Bellwood Pond Design	Prof Serv	$ 11,625.00
3/18/2019	6th St Low Flow Design	Prof Serv	$ 7,056.25
3/18/2019	Dawngate Pond Design	Prof Serv	$ 7,750.00
4/15/2019	6th St Low Flow Design	Prof Serv	$ 2,823.50
4/30/2019	Southside Stormwater Study	Prof Serv	$ 3,120.00
6/20/2019	6th St Low Flow Design	Prof Serv	$ 1,411.25
7/15/2019	Dawngate Pond Design	Prof Serv	$ 2,712.50

Appendix D

Belvidere MS4 Stormwater Management Plan

CITY OF BELVIDERE

NPDES PHASE II
POLLUTION PREVENTION PLAN
March 2008

Prepared by:

Carroll Engineering & Associates, Inc.
111 West Hurlbut Avenue
Belvidere, IL 61008 (815) 547-3406

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- B.6 Program Coordination

C. Illicit Discharge Detection and Elimination
- C.1 Storm Sewer Map Preparation
- C.2 Regulatory Control Program

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Part 1

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
NOTICE OF INTENT FOR NEW OR RENEWAL OF GENERAL PERMIT FOR DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s)

Input forms in Word format are available via email.
terri.lemasters@illinois.gov
or by calling the Permit Section at 217/782-0610
See address for mailing on page 4

For Office Use Only – Permit No. ILR40_____

Part I. General Information

1. MS4 Operator Name: City of Belvidere

2. MS4 Operator Mailing Address:
   Street- 401 Whitney Blvd. City- Belvidere
   State- Illinois Zip Code- 61008

3. Operator Type: City

4. Operator Status: Local

5. Name(s) of Governmental Entity(ies) in which MS4 is located: Belvidere

6. Area of land that drains to your MS4 (in square miles): 320

7. Latitude/Longitude at approximate geographical center of MS4 for which you are requesting authorization to discharge:
   Latitude: 42 DEG. 15 MIN. 20 SEC. Longitude: 88 DEG. 52 MIN 00 SEC.

8. Name(s) of known receiving waters: *Attach additional sheets (Attachment 1) as necessary*:

1. Kishwaukee River		2. Beaver Creek	
3. Piscasaw Creek		4. Coon Creek	
5. Mosquito Creek		6. Mayberry Creek	
7.		8.	
9.		10.	

9. Persons Responsible for Implementation/Coordination of Storm Water Management Program:

Name	Title	Telephone No.	Area of Responsibility
Craig Lawler	Dir. Of P.W.	(815) 544-9256	Implementation/Coordination
Brent Anderson	Assist. Dir. Of P.W.	(815) 544-9256	Implementation/Coordination
Larry Ohlsen	Street Depart.	(815) 544-9256	Operations

Information required by this form must be provided to comply with 415 ILCS 5/39 (2000). Failure to do so may prevent this form from being processed and could result in your application being denied.

Part II. Best Management Practices (include shared responsibilities) which has been implemented in the MS4 area or proposed to be implemented

(Details of BMP implementation for each checked BMP number, e.g., A.1, E.2, is required in Part IV of this NOI.)

A. Public Education and Outreach
- ☒ A.1 Distributed Paper (Resource) Material
- ☐ A.2 Speaking Engagement
- ☒ A.3 Public Service Announcement
- ☐ A.4 Community Event
- ☐ A.5 Classroom Education Material
- ☒ A.6 Other Public Education

B. Public Participation/Involvement
- ☒ B.1 Public Panel
- ☐ B.2 Educational Volunteer
- ☐ B.3 Stakeholder Meeting
- ☐ B.4 Public Hearing
- ☐ B.5 Volunteer Monitoring
- ☒ B.6 Program Coordination
- ☐ B.7 Other Public Involvement

C. Illicit Discharge Detection and Elimination
- ☒ C.1 Storm Sewer Map Preparation
- ☒ C.2 Regulatory Control Program
- ☐ C.3 Detection/Elimination Prioritization Plan
- ☐ C.4 Illicit Discharge Tracing Procedures
- ☐ C.5 Illicit Source Removal Procedures
- ☐ C.6 Program Evaluation and Assessment
- ☐ C.7 Visual Dry Weather Screening
- ☐ C.8 Pollutant Field Testing
- ☐ C.9 Public Notification
- ☐ C.10 Other Illicit Discharge Controls

D. Construction Site Runoff Control
- ☒ D.1 Regulatory Control Program
- ☒ D.2 Erosion and Sediment Control BMPs
- ☒ D.3 Other Waste Control Program
- ☒ D.4 Site Plan Review Procedures
- ☐ D.5 Public Information Handling Procedures
- ☒ D.6 Site Inspection/Enforcement Procedures
- ☐ D.7 Other Construction Site Runoff Controls

E. Post-Construction Runoff Control
- ☒ E.1 Community Control Strategy
- ☒ E.2 Regulatory Control Program
- ☐ E.3 Long Term O&M Procedures
- ☒ E.4 Pre-Const Review of BMP Designs
- ☒ E.5 Site Inspections During Construction
- ☒ E.6 Post-Construction Inspections
- ☐ E.7 Other Post-Const Runoff Controls

F. Pollution Prevention/Good Housekeeping
- ☒ F.1 Employee Training Program
- ☒ F.2 Inspection and Maintenance Program
- ☐ F.3 Muni Operations Storm Water Control
- ☒ F.4 Municipal Operations Waste Disposal
- ☐ F.5 Flood Management/Assess Guidelines
- ☐ F.6 Other Municipal Operations Controls

Information required by this form must be provided to comply with 415 ILCS 5/39 (2000). Failure to do so may prevent this form from being processed and could result in your application being denied.

Part III. Qualifying Local Programs

Attach additional sheets (Attachment 2) as necessary:

(Describe any qualifying local programs that your MS4 has implemented or will propose to implement)

1. **Public Education and Outreach:**

A1) Distribute Paper (Resource) Material – City will assemble existing literature provided by the Boone County Conservation District as well as other sources in order to develop a library of information which will be made available to the public at local government offices and on the City's website.
A1) City will promote pollution prevention in its quarterly newsletter; ie: Kishwaukee River CleanUp Day.
A3) City will promote pollution prevention on their local cable channel by PSA; ie: Kishwaukee River Clean Up Day.
A6) City will use public meeting forums scheduled with citizens to discuss public improvement projects to inform and educate them on storm sewer pollution, estimated twice annually.

2. **Public Participation/Involvement:**

B1) Kishwaukee River Ecosystem Partnership – The mission of this group is to integrate the interests and participation of local communities and private, public and corporate landowners to enhance and protect watersheds through ecosystem-based management. City supports the mission of this group but no longer actively participates. An office was provided to the Watershed Coordinator at the previous City hall location but the City was unable to provide office space at the current City Hall building.
B1) Regional Storm Water Management Committee. City has 2 permanent seats on this committee.

3. **Illicit Discharge Detection and Elimination:**

C1) Prepare City-wide GIS database storm sewer system map.
C2) Boone County Health Department inspects, reviews and permits septic system within City watershed.
C2) City Ordinance 114-601 prohibits discharging any polluting substances into any storm sewer in the City.

4. **Construction Site Runoff Control:**

D1), D2), D3) City Ordinances 151.42 and 151.45 requires the implementation of proper erosion control and sediment controls and controls for other wastes, sets standards, provides for plan review, site inspection and enforcement during the construction process.
D4), D6) The Boone County Soil & Water Conservation District reviews all subdivision plans and does on site inspections during construction.

5. **Post-Construction Runoff Control:**

E1) The Boone County Comprehensive Plan promotes improved water quality by guiding the growth of the community away from sensitive areas and by restricting certain types of growth to areas that can support it without compromising water quality.
E2), E4) City Ordinances 151.42 and 151.45 regulate the design of storm water runoff facilities and encourages structural BMP's to maximize the water quality of storm water run-off from all new developments and redevelopments.

6. **Pollution Prevention/Good Housekeeping:**

F1) City employees will have 2 hours per year of required training in pollution prevention.

Copy and complete this page if additional pages are necessary:

Attachment 2

Part III (Continued) Qualifying Local Programs

(Describe any qualifying local programs that your MS4 has implemented or will propose to implement)

1a. Public Education and Outreach:

2a. Public Participation/Involvement:

B6) Annual Kishwaukee River Clean Up Day sponsored and administered by the Boone County Conservation District.

B6) Storm drain stenciling – Students or groups will complete this task when they are requested to complete a community service project.

B6) Work release cleanup is administered by the City Police Department and held once weekly for community service participants to clean up litter around the city.

B6) Annual Street Beautification is an annual program where students get together to clean up litter in certain areas of the city.

3a. Illicit Discharge Detection and Elimination:

4a. Construction Site Runoff Control:

5a. Post-Construction Runoff Control:

E5), E6) The City and BCSWCD provide inspection during construction and follow-up inspections once the storm water structures are completed.

6a. Pollution Prevention/Good Housekeeping:

F2) Street Department has 2 street sweepers, cleans 100% of city streets at least 2 times per year, fall leaf pickup program.

F2) Control dumping and runoff from snow disposal site.

F4) All fluids from vehicle maintenance for Public Works are collected and recycled.

Part IV. Measurable Goals (include shared responsibilities) implemented by the MS4 in the past 5 years. Also, describe new goals proposed to be implemented by the MS4.

Attach additional sheets (Attachment 3) as necessary

(BMP No. should match that checked in Part II of this NOI. The applicant may repeat the same BMP No. where more than one BMP of similar type is to be implemented. Where necessary, attach additional sheets to provide more detail on each specific BMP.)

BMP No. A-1 Distributed Paper (Resource) Material
Brief Description of BMP: Distribution of existing literature and creation of a library of resource material. See the Pollution Prevention Plan for a representative list of information available.
Measurable Goal(s), including frequencies: Improve access to information and provide a resource for citizens and groups at City Hall. Number of units distributed, 12 per quarter and 1 website page.
Milestones:
Year 1: Assemble existing information from local agencies, add new information, update website.
Year 2: Monitor distribution/availability of paper material and website hits.
Year 3: Monitor distribution/availability of paper material and website hits.
Year 4: Update material and prepare 1 new brochure. Monitor distribution.
Year 5: Monitor distribution/availability of paper material and website hits.

BMP No. A-1 Distributed Paper (Resource) Material
Brief Description of BMP: City newsletter articles that promote pollution prevention.

Measurable Goal(s), including frequencies: 1 Article, quarterly.

Milestones:
Year 1: Create new newsletter article quarterly.
Year 2: Create new newsletter article quarterly.
Year 3: Create new newsletter article quarterly.
Year 4: Create new newsletter article quarterly.
Year 5: Create new newsletter article quarterly.

BMP No. A-3 Public Service Announcement
Brief Description of BMP: Advertise the Annual Kishwaukee River Clean Up Day (See B6) on the City's local cable channel.
Measurable Goal(s), including frequencies: Annually.

Milestones:
Year 1: Post an advertisement on the cable channel prior to event.
Year 2: Post an advertisement on the cable channel prior to event.
Year 3: Post an advertisement on the cable channel prior to event.
Year 4: Post an advertisement on the cable channel prior to event.
Year 5: Post an advertisement on the cable channel prior to event.

BMP No. A-6 Other Public Education
Brief Description of BMP: Educate local citizens at public forums to discuss proposed public improvement projects.
Measurable Goal(s), including frequencies: Twice per year, estimated.

Milestones:
Year 1: Each public meeting in Capital Improvements Program.
Year 2: Each public meeting in Capital Improvements Program.
Year 3: Each public meeting in Capital Improvements Program.

Year 4: Each public meeting in Capital Improvements Program.
Year 5: Each public meeting in Capital Improvements Program.

Copy and complete this page if additional pages are necessary:

Attachment 3

Part IV. (Continued) Measurable Goals (include shared responsibilities) Implemented in Past 5 Years by MS4. Also, Describe New Goals Proposed to be Implemented by MS4

BMP No. B-1 Public Panel
Brief Description of BMP: City participation in the Regional Storm Water Management Committee for Boone County.
Measurable Goal(s), including frequencies: 90% attendance at meetings and technical committees.

Milestones:
Year 1: Monthly meeting schedule
Year 2: Monthly meeting schedule
Year 3: Monthly meeting schedule
Year 4: Monthly meeting schedule
Year 5: Monthly meeting schedule

BMP No. B-6 Program Coordination
Brief Description of BMP: Annual Kishwaukee River Clean Up Day sponsored by the Boone County Conservation District.
Measurable Goal(s), including frequencies: Annual program, will monitor and obtain annual report from BCCD.
Milestones:
Year 1: Obtain report post event.
Year 2: Obtain report post event.
Year 3: Obtain report post event.
Year 4: Obtain report post event.
Year 5: Obtain report post event.

BMP No. B-6 Program Coordination
Brief Description of BMP: Storm drain stenciling to be performed by students or groups interested in completing community service projects.
Measurable Goal(s), including frequencies: To be completed as requested by students.

Milestones:
Year 1: Provide necessary materials & instructions to stencil as requested by students or groups.
Year 2: Provide necessary materials & instructions to stencil as requested by students or groups.
Year 3: Provide necessary materials & instructions to stencil as requested by students or groups.
Year 4: Provide necessary materials & instructions to stencil as requested by students or groups.
Year 5: Provide necessary materials & instructions to stencil as requested by students or groups.

Copy and complete this page if additional pages are necessary:

Attachment 3

Part IV. (Continued) Measurable Goals (include shared responsibilities) Implemented in Past 5 Years by MS4. Also, Describe New Goals Proposed to be Implemented by MS4

BMP No. B-6 Program Coordination
Brief Description of BMP: Work release program administered by the City Police Department for inmates to clean up specific areas of the city.
Measurable Goal(s), including frequencies: Continue weekly program.

Milestones:
Year 1: Performed once per week.
Year 2: Performed once per week.
Year 3: Performed once per week.
Year 4: Performed once per week.
Year 5: Performed once per week.

BMP No. B-6 Program Coordination
Brief Description of BMP: Annual Street Beautification program administered by the Mayor's coordinator is held for community groups to participate in the clean up of City streets.
Measurable Goal(s), including frequencies: Continue annual program.

Milestones:
Year 1: Program is held annually.
Year 2: Program is held annually.
Year 3: Program is held annually.
Year 4: Program is held annually.
Year 5: Program is held annually.

BMP No. C-1 Storm Sewer System Map Preparation
Brief Description of BMP: Create digital map of storm sewer system.

Measurable Goal(s), including frequencies: Map complete system and integrate map into City-wide GIS database by 2011.

Milestones:
Year 1: Complete 25% of database (7% completed to date, 3% in progress)
Year 2: Complete 25% of database
Year 3: Complete 25% of database
Year 4: Complete 25% of database
Year 5: Update and expand database as system expands.

Copy and complete this page if additional pages are necessary:

Attachment 3

Part IV. (Continued) Measurable Goals (include shared responsibilities) Implemented in Past 5 Years by MS4. Also, Describe New Goals Proposed to be Implemented by MS4

BMP No. C-2 Regulatory Control Program
Brief Description of BMP: Elimination of polluted water entering groundwater and streams. See inventory of existing septic systems within City limits.
Measurable Goal(s), including frequencies: Boone County Health Department reviews and administers permits for septic systems. Eliminate locations from the list when the system becomes defective.
Milestones:
Year 1: City and County Departments monitor and enforce local regulations.
Year 2: Monitor elimination of illegal septic systems.
Year 3: Monitor elimination of illegal septic systems.
Year 4: Update regulations as needed, continue monitoring.
Year 5: Update regulations as needed, continue monitoring.

BMP No. C-2 Regulatory Control Program
Brief Description of BMP: Enforcement of local Ordinance 114-601 which prohibits discharging any polluted substances into storm sewers.
Measurable Goal(s), including frequencies: Locate problem areas, identify sources using maps, enforce the ordinance and document. Verify no illicit discharges in community by 2018.
Milestones:
Year 1: Review & update ordinance, train employees to look for violations
Year 2: Inspect 10% of system and all outfalls, report violations to Code Enforcement Dept.
Year 3: Inspect 10% of system and all outfalls, report violations to Code Enforcement Dept.
Year 4: Inspect 10% of system and all outfalls, report violations to Code Enforcement Dept.
Year 5: Inspect 10% of system and all outfalls, report violations to Code Enforcement Dept.

BMP No. D-1, D-2, D-3, D-4, D-6 Construction Site Runoff Control
Brief Description of BMP: Continued enforcement of local Ordinances 151.42 and 151.45 regulating storm water runoff and sediment and erosion control.
Measurable Goal(s), including frequencies: All new development and redevelopment projects within City limits comply with ordinances. All projects obtain BCSWCD permit.
Milestones:
Year 1: BCSWCD annual report of activities submitted to City by 12/30 each year.
Year 2: BCSWCD annual report of activities submitted to City by 12/30 each year.
Year 3: BCSWCD annual report of activities submitted to City by 12/30 each year.
Year 4: BCSWCD annual report of activities submitted to City by 12/30 each year.
Year 5: BCSWCD annual report of activities submitted to City by 12/30 each year.

BMP No. E-1 Community Control Strategy
Brief Description of BMP: Comprehensive Land Use plan promotes and emphasizes protecting sensitive areas and controls growth in these areas.
Measurable Goal(s), including frequencies: Review plan annually and update for new issues. 100% of new subdivisions to comply with plan.
Milestones:
Year 1: Plan is reviewed and updated to include pollution prevention in purpose statement.
Year 2: Monitor compliance at all Planning Commission meetings.
Year 3: Monitor compliance at all Planning Commission meetings.
Year 4: Monitor compliance at all Planning Commission meetings.
Year 5: Monitor compliance at all Planning Commission meetings.

Copy and complete this page if additional pages are necessary:

Attachment 3

Part IV. (Continued) Measurable Goals (include shared responsibilities) Implemented in Past 5 Years by MS4. Also, Describe New Goals Proposed to be Implemented by MS4

BMP No. E-2, E-4 Post Construction Runoff Control

Brief Description of BMP: Ordinance and plan review process control design of storm water runoff facilities and encourages structural BMPs.

Measurable Goal(s), including frequencies: All new developments and redevelopments comply with ordinance.

Milestones:
- **Year 1:** All plans reviewed by BCSWCD, City& BCSWCD meet annually to discuss applications.
- **Year 2:** All plans reviewed by BCSWCD, City& BCSWCD meet annually to discuss applications.
- **Year 3:** All plans reviewed by BCSWCD, City& BCSWCD meet annually to discuss applications.
- **Year 4:** All plans reviewed by BCSWCD, City& BCSWCD meet annually to discuss applications.
- **Year 5:** All plans reviewed by BCSWCD, City& BCSWCD meet annually to discuss applications.

BMP No. E-5, E-6 Post Construction Runoff Control

Brief Description of BMP: City and BCSWCD provide inspection during construction and follow up inspections once the storm water structures are completed.

Measurable Goal(s), including frequencies: All construction sites inspected routinely and finished developments inspected on a 5 year cycle.

Milestones:
- **Year 1:** Inspect 20% of active detention ponds, report findings @ annual meeting discussed in E2, E4. See D6 for construction phase.
- **Year 2:** Inspect 20% of active detention ponds, report findings @ annual meeting discussed in E2, E4. See D6 for construction phase.
- **Year 3:** Inspect 20% of active detention ponds, report findings @ annual meeting discussed in E2, E4. See D6 for construction phase.
- **Year 4:** Inspect 20% of active detention ponds, report findings @ annual meeting discussed in E2, E4. See D6 for construction phase.
- **Year 5:** Inspect 20% of active detention ponds, report findings @ annual meeting discussed in E2, E4. See D6 for construction phase.

BMP No. F-1 Employee Training Program

Brief Description of BMP: Employee training to emphasize the importance of pollution prevention.

Measurable Goal(s), including frequencies: Train City employees annually on identifying illicit discharges and other pollution prevention measures. Estimated 2 hours annually.

Milestones:
- **Year 1:** Assemble training materials and perform training session.
- **Year 2:** Update material and perform annual training session.
- **Year 3:** Update material and perform annual training session.
- **Year 4:** Update material and perform annual training session.
- **Year 5:** Update material and perform annual training session.

Copy and complete this page if additional pages are necessary:

Attachment 3

Part IV. (Continued) Measurable Goals (include shared responsibilities) Implemented in Past 5 Years by MS4. Also, Describe New Goals Proposed to be Implemented by MS4

BMP No. F-2 Inspection and Maintenance Program
Brief Description of BMP: Street sweeping and fall leaf pickup program.

Measurable Goal(s), including frequencies: Sweep 100% of streets 2 times per year, perform annual fall leaf pickup program for 100% of corporate limits

Milestones:
Year 1: Track and report sweeper hours monthly and leaf pickup crew hours annually.
Year 2: Track and report sweeper hours monthly and leaf pickup crew hours annually.
Year 3: Track and report sweeper hours monthly and leaf pickup crew hours annually.
Year 4: Track and report sweeper hours monthly and leaf pickup crew hours annually.
Year 5: Track and report sweeper hours monthly and leaf pickup crew hours annually.

BMP No. F-2 Inspection and Maintenance Program
Brief Description of BMP: Control dumping and runoff from snow disposal site.

Measurable Goal(s), including frequencies: No illicit discharges from snow disposal site.

Milestones:
Year 1: Create a snow dumping and runoff control plan and train employees.
Year 2: Monitor runoff and retrain employees at annual snow meeting.
Year 3: Monitor runoff and retrain employees at annual snow meeting.
Year 4: Monitor runoff and retrain employees at annual snow meeting.
Year 5: Monitor runoff and retrain employees at annual snow meeting.

BMP No. F-4 Municipal Operations Waste Disposal
Brief Description of BMP: Waste fluids at City departments in recycling program performed by contractor.

Measurable Goal(s), including frequencies: All waste fluids collected and recycled.

Milestones:
Year 1: Review existing recycling effectiveness and contract annually, require manifests.
Year 2: Review existing recycling effectiveness and contract annually, require manifests.
Year 3: Review existing recycling effectiveness and contract annually, require manifests.
Year 4: Review existing recycling effectiveness and contract annually, require manifests.
Year 5: Review existing recycling effectiveness and contract annually, require manifests.

Part V. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment.

Authorized Representative Name and Title	Signature	Date
Craig Lawler, Director of Public Works		

Mail completed form to:

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
DIVISION OF WATER POLLUTION CONTROL
ATTN: PERMIT SECTION
POST OFFICE BOX 19276
SPRINGFIELD, ILLINOIS 62794-9276

Information required by this form must be provided to comply with 415 ILCS 5/39 (2000). Failure to do so may prevent this form from being processed and could result in your application being denied.

Part II

A. Public Education and Outreach

A.1 The City has assembled existing literature from local agencies and created a library of resource material promoting pollution prevention. They will review all the literature acquired and add new information as necessary. A brochure stand will be placed in the front lobby of the City Hall Building that will hold the material for citizens to attain. The City will monitor the distribution of the material and restock as needed. During year 4, the City will review and update the current material as well as create one new brochure. Copies of some of the materials provided are attached in Exhibit A. The City will also update their website to provide online access to this material. They will monitor web page hits to this information and update the site as they update their paper material.

The City currently has a quarterly newsletter for their citizens that is inserted into the Community Shopper. Approximately 20,000 shoppers are distributed. The City will create a quarterly newsletter article that will promote pollution prevention. They will also use this newsletter to advertise the Kishwaukee River Annual Clean Up Day (discussed in section B.6) prior to the event. See Exhibit A for an example newsletter.

A.3 The City will have a public service announcement on their local cable channel to promote pollution prevention. In addition, they will advertise for the Annual Kishwaukee River Clean Up Day (discussed in section B.6) prior to the event.

A.6 Public meetings are held, on average, twice a year to inform and discuss current public improvement projects for the Capital Improvements Program. During this meeting, the City will prepare a standard presentation to educate citizens in pollution prevention. Literature will be handed out to support the presentation. Standard presentation material is attached in Exhibit A.

B. Public Participation/Involvement

B.1 The City currently has two seats on the Regional Storm Water Management Committee. The committee's management plan is to establish county-wide uniform minimum stormwater regulations, preserve, protect and restore water resources, promote awareness and understanding of stormwater management issues by the residents, identify and remedy existing areas of concern, and coordinate short and long term maintenance of natural waterways, manmade drainage ways, and stormwater management facilities. This committee meets monthly. See Exhibit B.

B.6 For the past 8 years, the Boone County Conservation District has held an Annual Kishwaukee River Clean Up Day. The District and community volunteers join together to clean up sections of the Kishwaukee River within the City limits. The District measures the removed material and informs the public through the newspaper or their newsletter. On average, this clean up day will bring in

approximately 500 pounds of material. To support this program and to bring in more volunteers, the City will post a Public Service Announcement on their cable station (See section A.3) prior to the event. The City will also promote the program by advertising it in their quarterly newsletter (See section A.1). It will be required that the BCCD must submit to the City an annual report after the event. This information will be kept on site.

The City added a storm drain stenciling program that will be completed by students or groups that are interested in doing community service projects. The City will keep stencils, paint and instructions at the City Hall and will distribute these to the volunteers that call requesting projects. It will be the student or group administrator's responsibility to coordinate the sections of the City that will be completed. The City will approve these sections prior to beginning the project. A final report will be submitted to the City describing the areas that were completed.

The City Police Department administers the Work Release program for inmates to participate in cleaning up the City streets. Once per week, they clean up specific areas of the City.

A Street Beautification program is held annually to clean up sections of City streets. This program allows for community groups to participate pick up litter in a designated section of the City. It is organized by the Mayor's coordinator.

C. Illicit Discharge Detection and Elimination

C.1 The City's current storm sewer map was originally drawn in 1960. They have begun to create a digital map of the entire storm sewer system using the original 1960 map and any public improvement or subdivision plans acquired. In addition, they are also performing field verification of the entire system. The City is creating this map by basin, currently with approximately 10% complete. Their goal is to complete 25% per year until the entire system map is drawn and field verified (Estimated completion is 2011). Once the map is complete, the storm sewer map will be integrated into their City-wide GIS database where currently their water system and sanitary system have already been completed. They will continue updating the storm system map as necessary when new subdivisions are built or storm sewer improvements are made.

C.2 The City's current Ordinance 114-601 prohibits connections discharging polluting substances to storm water drain. In year 1, the City will review this ordinance and update it to include a more detailed list of what is considered a polluting substance. This will include a section that prohibits illegal dumping with a detailed list of what pollutants are prohibited. This section also explains what discharges are exempt such as water line flushing or lawn watering. The revision of the ordinance also explains the penalties if anyone is identified polluting storm sewers. The City will update this section to include the official persons responsible for observing violations of the requirements of the ordinance. The City will train their employees

to look for these violations. In years 2 – 5, City employees will inspect 10% of the storm sewer system and 100% of outfalls and fill out an inspection report for each structure. This information will be kept on file. They will report any violations discovered to the Code Enforcement Department. It is the City's goal to verify no illicit discharges by the year 2018. See Exhibit C.

The Boone County Health Department reviews and administers permits for all septic systems in Boone County. Any area in the corporate limits of Belvidere that are not served by sanitary sewer are required to obtain a Boone County Health Department permit for a septic system.

D. Construction Site Runoff Control

D.1, D.2, D.3, D.4, D.6 The City's current ordinances 151.42 and 151.45 are written to regulate storm water runoff and sediment and erosion control in all new developments and redevelopment projects within City limits. All projects are to comply with these ordinances and required to obtain a permit from the Boone County Soil and Water Conservation District. The City will require copies of all permits issued. An annual report of all permit and inspection activities will be provided to the City from the BCSWCD by December 30th each year. This information is kept on file at the City. See Exhibit D.

E. Post-Construction Runoff Control

E.1 The Comprehensive Land Use Plan promotes and emphasizes protecting sensitive areas and controls growth in these areas. 100% of all new subdivisions are to comply with this plan. The City will review this plan annually and update for any new issues. In year 1, the plan will be reviewed and updated to include pollution prevention in the purpose statement. The plan will be monitored at all Planning Commission meetings.

E-2, E-4 The City requires all new development and redevelopment projects within the City limits comply with ordinances 151.42 and 151.45. These ordinances require process control design of storm water runoff facilities and encourage structural BMPs. The Boone County Soil and Water Conservation District and the City review all plans for compliance. They meet annually to discuss applications and make any necessary ordinance improvements.

E-5, E-6 The City and the Boone County Conservation District provide inspections during the construction of new developments and redevelopment projects. Any violations to ordinances 151.42 and 151.45 are documented and presented to the Code Enforcement Department. Completed development detention ponds will be inspected on a 5-year cycle. Inspection reports will be completed and filed. The findings will be discussed in the annual meeting held between the BCSWCD and the City as discussed in E-2, E-4. See Exhibit E.

F. Pollution Prevention/Good Housekeeping

F.1 The City will require City employees to complete an estimated 2 hours of training annually. The focus of these training sessions will be to teach employees how to identify illicit discharges in outfalls, storm structures or detention ponds. The City will review their training materials annually and update as necessary. The training materials, "Good Housekeeping for Municipal Operations" and "Good Housekeeping for Municipal Facilities" are kept on file at the City.

F-2 The City street department owns two street sweepers and sweeps 100% of City streets twice on average twice per year. The monthly hours for sweeping are tracked, reported and filed. They also have an annual fall leaf pickup program that includes 100% of corporate limits. A brochure is mailed to citizens before pickup begins to inform them of the times there areas will be picked up. See Exhibit F. Crew hours for leaf pickup are tracked, reported and filed annually at the City.

The City's snow dumping site is located on Appleton Road. They have a dumping and runoff control plan to prevent illicit discharging into the river from melting snow. An aerial overview of the site is attached with the locations of proposed berms and swales that will be created to control the runoff. The City will use this plan to modify their site. See Exhibit F.

The street department holds an annual snow meeting just before the first snow. This meeting is held to inform snowplow drivers of the rules and safety measures during plowing. The snow assignment areas are included in the agenda. The agenda is kept on file at the City.

F-4 City departments have a recycling program that is performed by an outside contractor. All waste fluids collected are recycled. Annually, the City will review the recycling effectiveness and their current contract with the contractor and make any necessary improvements. They will require manifests from the contractor and will keep them on file.

Part III
Appendix

Appendix E

Preliminary Rate Analysis Worksheets

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL

Parcel Analysis

Belvidere Stormwater Utility Feasibility Study
FG Project No.: 19-573

Annual ERU Charge	$	34.88	per year
Monthly ERU Charge	$	5.81	bi-monthly
Annual ERU Charge w/ 10% Contingency	$	38.37	per year
Monthly ERU Charge w/ 10% Coningency	$	6.39	bi-monthly

Date 2/17/2020

Code	Description	Number of Properties	Average Area (Acres)	Total Area (Acres)	Impervious Percentage	Impervious Area (Acres)	Average Impervious (Acres)	Average ERU	Total ERU	Revenue
110	Rural with Building	19	36.5	694	16%	111	5.84	73.33	1393.3	$ 48,598.91
210	Rural without Building	161	9.03	1454	0%	0	0	0.00		$ -
300	Residential Lot without Building	383	0.5	192	0%	0	0	0.00		$ -
320	Developer Lot	97	0.45	44	0%	0	0	0.00		$ -
400	Residential Lot with Building	6557	0.26	1705	32%	546	0.080	1.00	6557.0	$ 228,708.16
500	Apartment 6 Units or More	59	1.04	61	57%	35	0.5928	7.44	439.2	$ 15,318.64
520	Developer Apartment Land	8	0.35	3	0%	0	0	0.00		$ -
600	Commercial	411	1.36	559	78%	436	1.0608	13.32	5474.7	$ 190,956.91
620	Developer Commercial Land	54	1.91	103	0%	0	0	0.00		$ -
700	Commercial Office	14	0.98	14	78%	11	0.7644	9.60	134.4	$ 4,687.15
800	Industrial	102	8.06	822	60%	493	4.836	60.73	6194.0	$ 216,046.14
820	Developer Industrial Land	35	2.32	81	0%	0	0	0.00		$ -
900	Tax Exempt Excluding Conservation Area	200	2.94	587	27%	159	0.793098	9.96	1991.8	$ 69,473.14
910	Tax Exempt Conservation Area	19	74.2	1410	1%	14	0.742	9.32	177.0	$ 6,174.72

Revenue	$	779,963.77

Appendix F

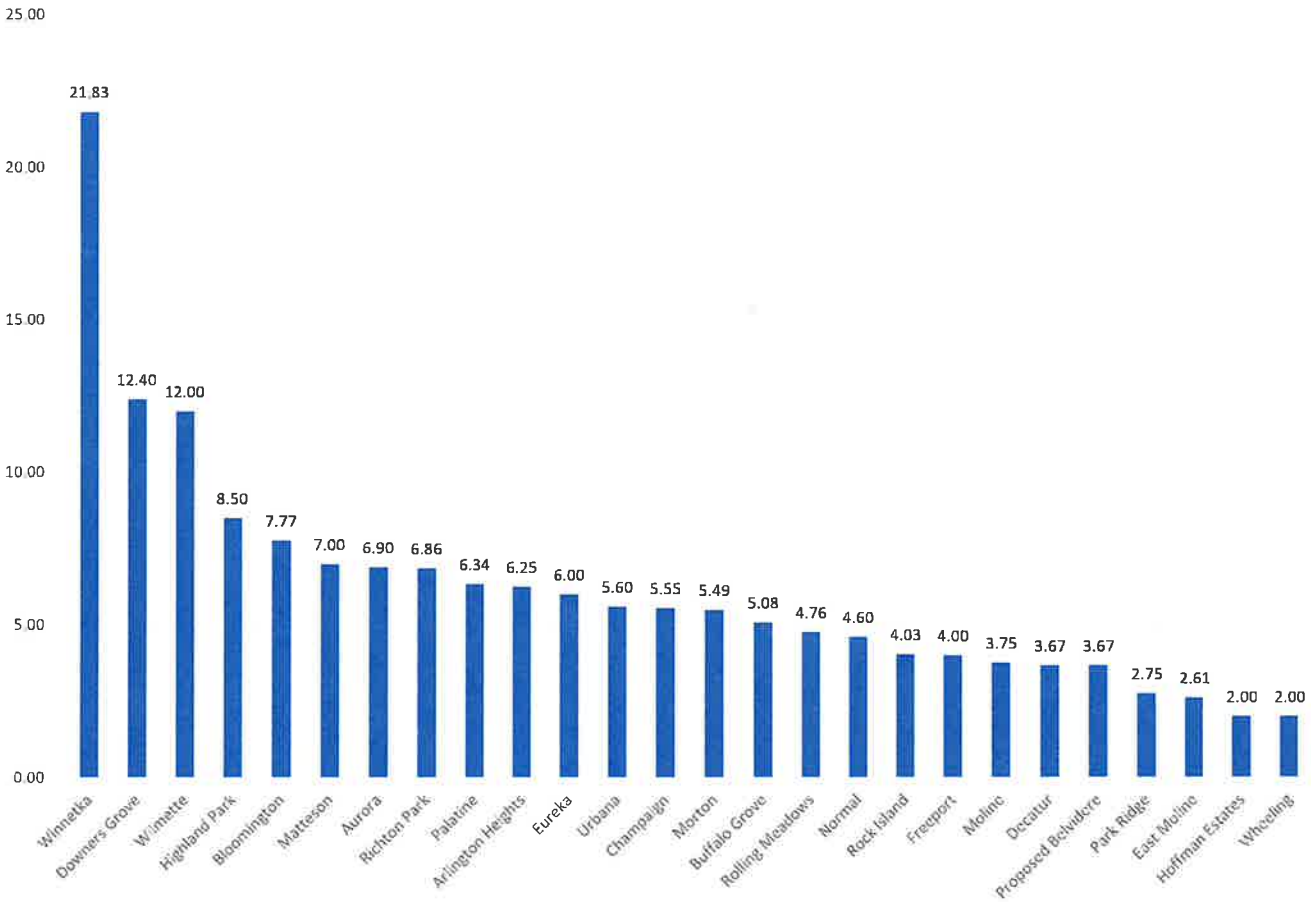
Benchmarking Data

Illinois 2019 Storm Water Utility Rate Table

City	Rate*	Rate Base	Fee Structure	ERU	Credit
Arlington Heights	$ 6.25	Land Use	Residential and non-profit flat, other tiered	--	N
Aurora	$ 6.90	Flat	Flat to all water users	--	N
Bloomington	$ 7.77	Imp Area	Residential tiers, other by impervious area	1,000	Y
Buffalo Grove	$5.08	Parcel Size	Flat residential, others gross parcel area	--	N
Champaign	$ 5.55	Imp Area	Residential tiers, other by impervious area	3,478	Y
Decatur	$ 3.67	Imp Area	Base fee plus impervious	4,500	Y
Downers Grove	$ 12.40	Imp Area	Residential tiers, other by impervious area	3,300	Y
East Moline	$ 2.61	Imp Area	Residential tiers, other by impervious area	2,200	N
Eureka	$ 6.00	Imp Area	I ERU single family, others imperious area	3,250	Y
Freeport	$ 4.00	Land Use	$4 res / $20 com / $20 pub / $40 ind	--	N
Highland Park	$ 8.50	Imp Area	Impervious area	2,765	Y
Hoffman Estates	$ 2.00	Imp Area	Residential tiers, other by impervious area	3,300	N
Matteson	$ 7.00	Imp Area	Flat residential, others by impervious area	4,000	N
Moline	$ 3.75	Imp Area	Residential tiers, other eff hydraulic area	--	Y
Morton	$ 5.49	Imp Area	Flat residential, others by impervious area	3,300	Y
Normal	$ 4.60	Imp Area	Flat residential, others by impervious area	3,200	Y
Northbrook	--	Water Use	Based on water usage	--	N
Orland Park	--	Water Use	Based on water usage	--	N
Palatine	$ 6.34	Parcel	Fixed	--	N
Park Ridge	$ 2.75	Imp Area	Impervious area	2,800	Y
Peoria	$ 7.80[1]	Imp Area	Impervious area	1,000	Y
Richton Park	$ 6.86	Water Meter	Residential / non-residential meter	--	N
Rock Island	$ 4.03	Imp Area	Residential tiers, other by impervious area	2,800	Y
Rolling Meadows	$ 4.76	Imp Area	Flat residential, others by impervious area	3,604	N
Tinley Park	--	Water Use	Based on water usage	--	N
Urbana	$ 5.60	Imp Area	Flat residential, others by impervious area	3,100	Y
Wheeling	$ 2.00	Imp Area	Flat residential, others by impervious area	3,000	Y
Wilmette	$ 12.00	Imp Area	Residential tiers, other by impervious area	3,590	Y
Winnetka	$ 21.83	Imp Area	Impervious area	3,400	Y

*Based on typical single-family property

[1] Average residential lot = 2.6 IAUs


2019 Monthly Stormwater Utility Fee for Illinois Communities
25.00
20.00
15.00
10.00
5.00
0.00
21.83
12.40
12.00
8.50
7.77
7.00
6.90
6.86
6.34
6.25
6.00
5.60
5.55
5.49
5.08
4.76
4.60
4.03
4.00
3.75
3.67
3.67
2.75
2.61
2.00
2.00
Winnetka
Downers Grove
Wilmette
Highland Park
Bloomington
Matteson
Aurora
Richton Park
Palatine
Arlington Heights
Eureka
Urbana
Champaign
Morton
Buffalo Grove
Rolling Meadows
Normal
Rock Island
Freeport
Moline
Decatur
Proposed Belvidere
Park Ridge
East Moline
Hoffman Estates
Wheeling

Appendix G

The Value of Stormwater Utilities for Local Governments in the Chicago Region

CMAP

The Value of Stormwater Utilities for Local Governments in the Chicago Region

January 2013

The Chicago Metropolitan Agency for Planning (CMAP) is the region's official comprehensive planning organization. Its GO TO 2040 planning campaign is helping the region's seven counties and 284 communities to implement strategies that address transportation, housing, economic development, open space, the environment, and other quality of life issues.

See **www.cmap.illinois.gov** for more information.

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Introduction

Communities in the Chicago region face increasing challenges in managing stormwater.

Flooding is a major problem in many areas. Storm sewers, culverts, and a host of other stormwater infrastructure components need repair, but funding for capital improvements is scarce. Likewise, many communities are interested in stabilizing stream banks and other restoration projects, yet they have limited resources to do so. And local responsibilities in complying with the federal Clean Water Act have multiplied and will likely increase in the future.

The stormwater utility is a good option for local governments to respond to these challenges. Setting up a stormwater utility allows a community to establish a user fee based on the demands property owners place on the drainage system. It provides a dedicated revenue stream for stormwater programs as well as an incentive for property owners to reduce the amount of runoff they generate. While special service areas may be used to fund projects at the neighborhood level, many needs are community-wide in scope and require a community-wide source of revenue.

A federal survey in 2008 found that municipalities in the Chicago region had a stormwater funding backlog of $233 per household.[1] Annualized flood damages in the Chicago region amount to $55 million per year.[2]

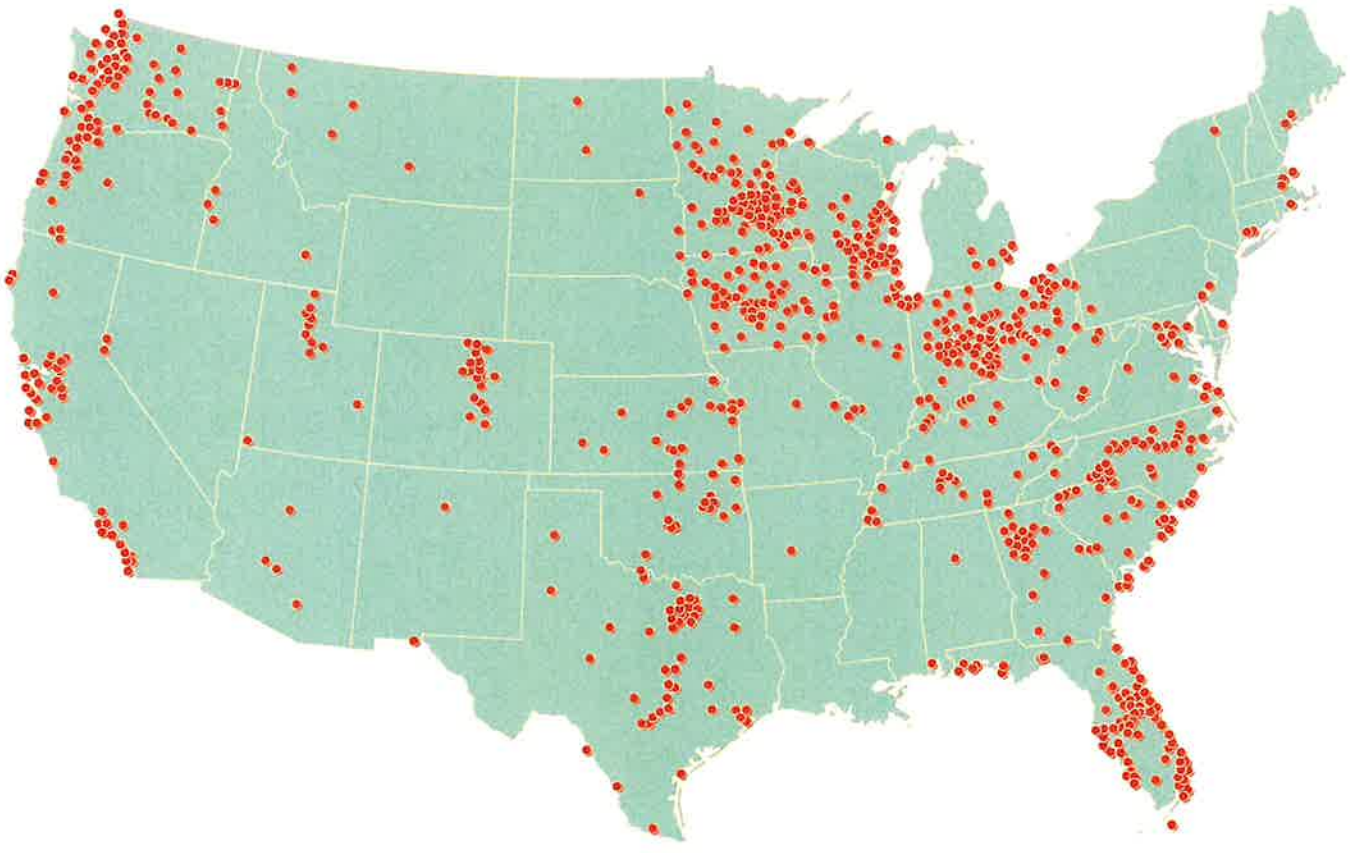
1 Calculated from the municipalities that provided stormwater needs estimates in the 2008 Clean Watershed Needs Survey, inflated to 2012 dollars. http://water.epa.gov/scitech/datait/databases/cwns/2008reportdata.cfm.

2 Illinois Department of Natural Resources. 1998. Our Community and Flooding. Estimate inflated to 2012 dollars. About half of the damages are in the Des Plaines basin. http://www.dnr.illinois.gov/WaterResources/Documents/OurCommunityAndFlooding_Oct1998.pdf.

Stormwater is the only major infrastructure system in the Chicago region that is not typically paid for through user fees. Whether public or private, drinking water, sewer service, electricity, natural gas, and telecommunications are all provided on a user-fee basis. Stormwater management, on the other hand, is usually funded through general revenue. Under the current system, then, some property owners are overpaying for stormwater services, while others are being subsidized. For example, a homeowner who builds an addition onto a house will pay higher property taxes than one who merely installs a patio of the same area, yet they would generate the same amount of runoff. A stormwater fee is a more equitable approach to paying for stormwater services.

Although they are still relatively rare in Illinois, stormwater utilities have become more common across the country (Figure 1), and many case studies exist. A number of communities have begun to study them more closely. Stormwater fees are within the powers of local governments in Illinois and have withstood legal challenges. Most local governments already operate water and wastewater utilities; stormwater can be readily addressed as a utility program.

Figure 1. Stormwater utilities in the United States as of 2012



Source: Western Kentucky University 2012 Stormwater Utility Survey.

Legal Authority

At the heart of the stormwater utility is the concept that stormwater services should be provided through a user fee rather than general taxation.

When stormwater utilities have been challenged in court, litigants have sometimes argued that the fee is actually a real estate tax and that the tax was improperly levied — for instance, levied on a church or other institution that is exempt from property taxes. However, stormwater fees have withstood this type of legal challenge in Illinois[3] as well as in several other states.[4] Case law supports the proposition that a stormwater charge meeting a basic legal test is not a tax.

A second question is whether local governments have the ability to institute the fee. Home rule units of local government, with their relatively broad powers to institute fees and taxes,[5] should have no legal difficulty in establishing stormwater fees. The majority of municipalities in Illinois that have established stormwater fees have done so under their home rule powers. While non-home rule units are more restricted in the fees they may establish, all municipalities have the power to own and operate utilities under the Illinois Municipal Code.[6] The non-home rule Village of Morton, City of East Moline, and Village of Richton Park have each established stormwater fees.

While authority under the utility statutes is clear, some non-home rule municipalities may feel more comfortable with more direct legislative language. It would be beneficial for the General Assembly to explicitly grant non-home rule units that operate separate storm sewer systems the power to establish stormwater utility fees. This should be valuable to many municipalities that need dedicated revenue for stormwater infrastructure but do not seek the broad local powers associated with home rule.

3 Church of Peace v. City of Rock Island, 828 N.E.2d 1282, 1284 (Ill. App. Ct. 2005).

4 Bolt v. City of Lansing, 459 Mich. 152, 587 N.W.2d 264 (1998); Howard Jarvis Taxpayers Association v. City of Salinas, 121 Cal. Rptr. 2d 228 (Cal. Ct. App. 6th dist. 2002); McLeod v. Columbia County, 278 Ga. 242, 599 S.E.2d 152 (2004).

5 Illinois Constitution, Article VII, Section 6.

6 65 ILCS 5/Art. 11 Div. 139 and 141. This section takes advantage of research in Stormwater Utility Feasibility Study: Final Report for the City of Urbana, Illinois, September 2011 (report prepared by AMEC) and a memorandum to the Village of Lombard from Klein, Thorpe, and Jenkins, Ltd. (2006).

Program Details

Stormwater Utility Best Practices

An ideal stormwater utility program would have the following characteristics:

1. The fee for each parcel is proportional to the runoff generated by that parcel;
2. All revenue is used to provide stormwater services and placed into an enterprise fund; and
3. Credits are given to property owners who reduce or treat their runoff.

This type of program is the most effective, most equitable, and least litigable. It is discussed in more detail below. Yet programs exist in Illinois and elsewhere that diverge from this pattern, and many are successful. For instance, some utilities charge a flat fee. Others may charge a fee proportional to runoff but not provide credits. Still others place the revenue into a special fund, but it may not be a true enterprise fund.

Fee Proportional to Runoff (#1)

The simplest, most widely-used method of computing a stormwater utility fee is to calculate an equivalent residential unit (ERU) equal to the mean or median impervious area on single-family residential parcels.[7] All single-family lots are charged at the rate of 1 ERU. Non-residential or multifamily residential parcels are then charged by the number of ERUs onsite. For instance, if an ERU is 2,000 square feet and a commercial property has 20,000 square feet of imperviousness, then it would be charged 10 ERUs.

The ERU method treats all single-family residences as producing the same amount of runoff while generally making the fee proportional for other property types. Although this reduces the administrative workload associated with the fee, it also works against the equity principle of the fee itself. For that reason, some local governments have chosen to develop tiers of impervious surface. Under this system, there would be a different fee to reflect, for example, low, medium, or high amounts of impervious surface on residential properties. Or a fee could be charged for every 500 square feet of impervious surface, for example, with individual properties rounded up or down to the nearest 500.

7 Campbell, C. Warren (2011). Western Kentucky University 2012 Stormwater Utility Survey, Western Kentucky University, Bowling Green, 51 pp. Available at http://www.wku.edu/engineering/civil/fpm/swusurvey/. See also Black and Veatch, 2010 Stormwater Utility Survey, http://204.118.135.81/Downloads/Resources/Brochures/rsrc_EMS_2010StormwaterUtilitySurvey.pdf.

Revenue Used to Provide Stormwater Services (#2)

The fee per ERU or unit of impervious area is based on the total revenue needed to build capital projects, fund program staff, and cover other aspects of the stormwater program. Thus the fee depends on the revenue needed. Some typical projects funded by stormwater fees are shown in Figure 2. In a true stormwater utility, the fee revenue would only be used for the stormwater program, not for other governmental purposes. Conversely, the fee would entirely cover the cost of the stormwater program, with no supplements from other funds. Ideally revenues would be placed into an enterprise fund, which is used to account for government activities that operate similarly to private business, where the costs of service are recovered through user charges. Local government accounting typically treats water and sewer utilities as enterprise funds, and stormwater would be no different.

Provide Credits or Rebates for Reducing Runoff (#3)

A good stormwater utility will include a set of rebates for implementing measures that reduce, treat, or otherwise manage stormwater runoff. Then a property owner, including a church or school, can take steps to reduce the bill owed for stormwater services. For instance, installing rain barrels to capture rain from downspouts, installing rain gardens in the yard, or using permeable pavement on the driveway — measures commonly called "green infrastructure" — could be worth a certain credit. In a community that has both newer subdivisions with detention ponds and older subdivisions with no detention, property owners in the subdivision with detention could be given rebates to reflect their reduced impact.

Figure 2. Typical projects funded by stormwater utility fees

Addressing street flooding.
Source: http://ceephotos.karcor.com/

Stabilizing streams and other stream restoration projects.

Removing debris from streams.

Installing storm sewers.
Source: http://www.erdmananthony.com/ProjectPortfolio/Detail.aspx?id=41

Appropriate Government Unit

A stormwater utility could be established in a variety of local government units or special districts, but the most likely units of government in northeastern Illinois are either a municipality or county. Nationwide, 81 percent of stormwater utilities are municipal and 19 percent are county-based or regional.[8] This publication takes no position on which level of government is most appropriate, and only notes some of the pros and cons associated with each. The level of government responsible for the utility is a secondary issue; what matters most is recognizing the importance of a dedicated user fee for stormwater.

A county-level utility would have some practical advantages. Economies of scale are possible by having a larger agency handle acquisition and analysis of impervious cover data. In fact, some municipalities do not have GIS capabilities sufficient to handle that aspect of stormwater fee administration (although they could contract for that service). Because of their role in property tax assessment and maintaining property records, the counties generally have sophisticated GIS capabilities. On the other hand, most municipalities already have water and sewer utility billing systems set up for their residents while counties generally do not. Stormwater fees are often added onto water/sewer bills rather than mailing separate bills.

From a policy standpoint, a county-level utility may help reduce concerns that the playing field for development is uneven because of varying fees between municipalities. (While property owners would be responsible for paying the fee, not developers, the fee would to some extent affect the price at which a developer could sell a property.) A tradeoff is also present in the use of funds. Pooling funds for larger projects selected at the county or watershed scale would likely lead to projects with larger benefits relative to their costs, but there may not be perfect proportionality between the jurisdictions providing fee revenue and those benefiting from projects. On the other hand, municipal land use regulations (such as parking ratios, height and bulk requirements, etc.) play a significant role in setting the level of imperviousness on private property. A fee charged at the county level may be disconnected from these municipal decisions.

One solution would be to have joint administration of the fee. In so doing, each level of government could take charge of the administrative aspects it is best suited to handle, taking care to make sure that services and fees are not being duplicated between municipalities and the county. In fact, such an approach could build on the successful model of joint county-municipal governance in the stormwater management and planning committees, which set county-wide stormwater standards through a body with equal numbers of county board members and municipal representatives.[9] Finally, as non-home rule units, counties would need legislation to enable them to charge fees — the utility statutes mentioned above do not apply to them.

8 Black and Veatch, 2010 Stormwater Utility Survey. http://204.118.135.81/Downloads/Resources/Brochures/rsrc_EMS_2010StormwaterUtilitySurvey.pdf.

9 Authorized by 55 ILCS 5/5-1062 and established in all of the CMAP counties.

Replacing failing culverts.
Source: www.newnhamfarms.com

Implementing green infrastructure projects.

Upgrading local drainage.
Source: http://saveourstream.blogspot.com/p/green-infrastructure.html

Stormwater Utilities in Illinois

Only eight municipalities in the Chicago region have implemented stormwater utility fees, and of those just three base the fee on impervious surface.

The others charge either a flat fee or a variable fee based on drinking water usage. The map in Figure 3 shows the municipalities that have instituted fees as of 2013. Fees range from a base rate of less than $2 per month to more than $8. Besides the eight municipalities in the Chicago area with stormwater utilities, another 11 downstate have enacted these programs (Table 1). This section briefly summarizes the programs implemented by Highland Park, Rolling Meadows, and Downers Grove, the three Chicago-area communities that base their fees on imperviousness.

City of Rolling Meadows

The City of Rolling Meadows implemented its new program in 2001 with the intention of charging an initial fee that would be under $20 per home per year. Based on an ERU approach, the fee was relatively easy to implement. A city newsletter, city council meetings, and other public meetings were used to inform residents of its purpose. In hindsight, however, the utility could have been more effective at funding stormwater management operations if the fee was designed to meet specific budget needs. It has taken several years of approximately 5 percent annual increases for the fee to be sufficient for meeting bond repayment obligations incurred to address local flooding and pay for operational costs. Current revenue generation is expected to reach $650,000 for the town of 24,000 people and can now fully support all aspects related to municipal stormwater management.

City of Highland Park

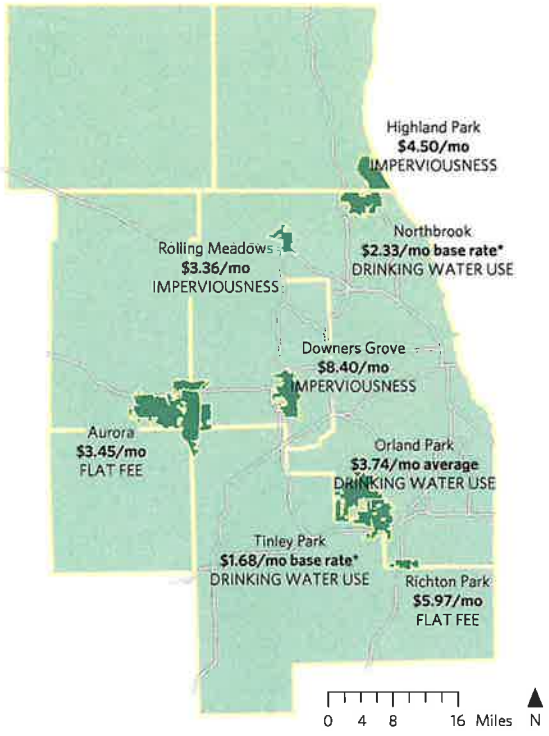
The City of Highland Park adopted a stormwater fee in 2006 with the goal of eventually generating enough revenue to fully fund stormwater operating and capital expenses. Support for the fee was driven from the need to fund stormwater operating and capital without having to increase property taxes. Currently, revenues from the fee provide approximately 60 percent of the stormwater budget. Over the next few years, the fee will increase annually until revenues cover 100 percent of the operating and capital costs. The City issued a bond to cover the remaining portion of the costs during the fee ramp-up. In FY 2012, the City expects that the fee will generate $1.2 million in a community with a population of almost 30,000.

The fee is collected based on impervious area of properties, with 2,765 square feet of impervious surface equaling one impervious area unit (IAU). The fee per IAU was initially $4. This was increased to $4.50 in 2012 and is expected to increase annually for the next several years. The fee appears on the water bill. The City offers two credits. If the property does not impact the stormwater sewer system (e.g. if the property's downspouts flow into the Skokie River), a 50-percent credit is given. Commercial properties that detain and treat their stormwater prior to discharge may be eligible for a 25 percent credit.

Village of Downers Grove

The Village of Downers Grove implemented a new stormwater utility program in January 2013. The fee is based on a tiered system for single family residential parcels and on the amount of impervious area per parcel, expressed in equivalent runoff units (ERU) at the rate of $8.40 per ERU. There are no exemptions from the fee, including Village-owned properties. Six types of credits are available along with a one-time incentive for installing qualifying best management practices. Fees will be included in the bimonthly water bill. Revenue generated is expected to be $3.3 million and will be the sole source of funds for the stormwater operating budget, including bond repayments that were recently incurred to fund stormwater improvements. Key to gaining support for the new program from government officials was a prior study and plan to address stormwater system maintenance and infrastructure needs for the village of 48,000 residents.

Figure 3. Monthly stormwater fee and basis of fee for municipalities in northeastern Illinois



Source: CMAP and Western Kentucky University.
*The actual average charge paid in communities basing the fee on drinking water usage is higher than the base rate shown.

Table 1. Downstate communities with stormwater utility programs

COMMUNITY	MONTHLY FEE	COMMUNITY	MONTHLY FEE
Bloomington	**$4.35**	Morton	**$4.74**
Champaign	**$5.24**	Normal	**$4.60**
East Moline	**$2.54**	O'Fallon	**$3.45**
Freeport	**$4.00**	Rantoul	**$3.43**
Moline	**$3.75**	Rock Island	**$3.95**
		Urbana	**$4.94**

Source: Western Kentucky University and CMAP.

Implementation Process

This section provides an outline of the steps to take in creating a stormwater utility. It is merely a guide, and some steps may blend into one another. Some communities will have already completed elements of the outline.

Assess Community Stormwater Needs

This step helps a community determine the scope of the water resource problems the community faces, such as flooding, erosion, water quality, federal or state mandates, etc. Project concepts and budgets may be developed at this stage. Many communities have already developed stormwater master plans, participated in watershed planning efforts, or through the normal budgeting process have a sense of their needs. Typically an engineering firm with experience in water resources would be hired to conduct a study, but many tasks can also be carried out in-house.

Conduct Stormwater Utility Feasibility Study

A feasibility study helps determine whether a stormwater utility is the right approach to meet identified needs. It would address policy and administrative details such as the method used to calculate the fee, the means of billing, penalties for non-payment, and so forth. Typically an engineering firm with experience in stormwater utilities would be hired to conduct the study. Some tasks may also be performed in-house.

Conduct Public Outreach and Education

Public outreach is critical to developing support for raising local revenue from a novel source. The most important elements likely will be to show the magnitude of the needs and to indicate how residents will benefit from any new fee.

Develop Local Ordinance and Credit Manual

An ordinance is required to implement the utility program. It would provide a fee schedule by property type based on the recommendations of the feasibility study and provide for a set of credits and rebates. It would also provide for an appeals process for property owners who believe they were billed improperly. A credit manual is often developed to accompany the ordinance and explain in more detail how to implement the practices that qualify for credits. Officials should strongly favor choosing the rate structure that will actually pay for their identified needs rather than a lower rate that seems more expedient. Communities that began with a lower rate have often wished they introduced the program at the level actually needed.

Addressing Concerns about Stormwater Utility Programs

It is worth exploring why and how attempts to create stormwater utility programs sometimes falter.

One issue is that residents may not perceive any new benefit from the new fee. But the needs assessment is meant to take the measure of flood risk and other problems that affect residents. If residents can be shown that the fee they pay would reduce or eliminate these problems, then they typically see a benefit to themselves in the fee. This is one of the reasons why public participation is critical. Residents may also perceive the fee as a new charge for something that has always been free. Likewise, education is needed to show that stormwater services are provided by local government now — although not to the extent needed — but paid for through residents' taxes.

Institutions such as schools and houses of worship that have large impervious areas but pay no local taxes will find themselves paying the stormwater fee. Opponents of the fees sometimes argue that requiring schools to pay a stormwater fee is "double taxation" in the sense that taxpayers fund the school system and so are ultimately also responsible for the stormwater fee as well. However, schools pay for water, electric, sewer, and gas service, and this state of affairs goes unchallenged. Religious institutions, on the other hand, may argue that their exemption from local taxes also qualifies them to avoid the stormwater fee. Again, this cannot be the case since a fee is not a tax. A stormwater utility that follows best practices will also include a set of rebates for implementing measures that reduce stormwater runoff. Then property owners, including schools and houses of worship, can reduce or eliminate the fee they pay.

The main reason to create a stormwater utility program is that needs are not being met with available resources. Thus, raising appropriate revenues should be seen as a goal of the program. Yet a stormwater utility can also result in direct savings for residents. Depending on the fee and credit structure, it is entirely possible for a property owner who takes advantage of the credits to pay less under the stormwater utility than under a system based on taxation. Savings for residents may be possible in other places as well. A stormwater utility should make it easier for local governments to earn credits under FEMA's Community Rating System[10] program, thereby earning residents reductions in their flood insurance premiums and returning the cost of the fees to residents.

Finally, while typical fees are fairly low ($2 – 8 per month), fees will be more difficult for some to pay than others. Rate assistance can be given, perhaps using the same policy that the water or sewer utility uses.

10 See http://www.fema.gov/national-flood-insurance-program/community-rating-system.

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Appendix H

Public Outreach Plan

City of Belvidere

Stormwater Utility Feasibility Study
Public Education and Outreach Plan

Overview

Garnering buy-in from the community is an important element of a successful project. To do that, the public must understand why the City of Belvidere is conducting a Stormwater Utility Feasibility Study. Residents and business leaders must also feel a sense of ownership in the project. The goal of the public education process must be to help the community understand the City's stormwater system, its needs, the proposed enhanced program, the costs and fees that come with the increased services and the utility fee funding approach.

Public Education and Outreach Plan

The City and the consultant team developed a Public Education and Outreach Plan that will increase awareness of the stormwater management program and its needs, especially as it pertains to adequate, sustainable and equitable funding. The goals and objectives of the Public Education and Outreach Plan and the recommended short- and long-term strategies for accomplishing the goals and objectives follow.

Goals and Objectives

The goals and objectives of the Public Education and Outreach Plan are based on our collective experience working with citizens and businesses. The Public Education and Outreach Plan includes:

1. Transparency and simplicity: The overall goal of the design of the utility is for it to be simple and easily understood by citizens. The Public Education and Outreach Plan should further this fundamental goal.

2. Build greater communitywide understanding of the scope and causes of the community's drainage problems and needs and the impact of the program on:

    a. The protection of property and the safety of citizens.
    b. The quality of life.
    c. The future economic health of the community.
    d. The water quality of local streams, creeks and lakes.

3. Achieve ongoing input and consensus among key stakeholders and citizens about stormwater problems, the need for increased services and funding, and future needs.

4. Build understanding that all stormwater problems and issues will not be resolved immediately. Emphasize that the program and annual budgets that are considered are equitable and affordable to better address a basic city service.

Recommended Approach

The City should target key neighborhoods and stakeholders. The implementation should include:

1. Give presentations about the proposed stormwater utility fee to local community groups and neighborhood associations. Encourage questions and feedback.

2. Expand and continue meetings to ensure that larger and significant stakeholders are familiar with the stormwater utility concept and its potential financial impact.

3. Work with the Belvidere Area Chamber of Commerce to provide information regarding the proposed stormwater utility fee to local businesses. Offer to make a presentation regarding the proposed fees at a Belvidere area Chamber of Commerce-sponsored meeting.

4. Create a page on the City of Belvidere's website to post information regarding the proposed stormwater utility. Another option is to create a separate website for the implementation. Consider adding an online bill calculator.

5. Use social media to share information and engage the public.

6. Use the Boone County Fair and other community events to focus attention on stormwater needs. Activities such as stenciling drains, clearing debris from drains and ditches, and other "field" activities should be included.

7. Designate a point of contact from the City.

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