

DRAFT

VILLAGE OF GLENVIEW, ILLINOIS

Stormwater Utility Fee Study



July 5, 2012



Village of Glenview, Illinois

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Executive Summary

In fully developed suburban areas such as Glenview, it is critical to have a fully functioning stormwater system that includes detention and conveyance in order to protect life, public health, and property. Glenview is approximately 13.5 square miles in size and has three watersheds containing three separate subsystems that have been evaluated and need improvement. These watersheds are the Chicago/Calumet Watershed which drains to the Middle Stem of the North Branch of the Chicago River, the Chicago/Calumet Sub-Watershed which drains to the West Fork of the North Branch of the Chicago River, and the Des Plaines River Watershed. One of the most difficult challenges affecting all three areas is that stormwater regulations have evolved over time as the needs were identified.

Much of Glenview was developed prior to establishment of stormwater regulations, and in total, more than half of the Village was developed with substandard drainage requirements. The worst deficiency is that approximately 58% of Glenview properties were developed without adequate stormwater detention. The current stormwater conveyance standard is to design underground storm pipes to handle flows that would be generated during a 10-year storm, which is supplemented by overland flow paths. In addition to these local issues, the three regional waterways that accept our drainage can exceed their capacity during intense rain events causing direct, and indirect, flooding impacts upstream. Therefore, Glenview is actively pursuing local and regional solutions to stormwater flooding.

Over the past 40 years, the Village has supported and implemented a variety of projects and programs to address stormwater management and flooding issues. Major projects put in place to reduce the risk of flooding to Glenview property owners include:

- The Southwest Storm Sewer Project;
- The Glenview Road Storm Sewer Project;
- The Techny Basin on the North Branch of the Chicago River;
- The Lake Glenview Detention Basin;
- Shermer Road Drainage and Detention Improvements;

- Many local drainage and detention projects completed by developers and the Village;
- The Village’s SWAMP cost-sharing program for unsewered areas; and,
- A cost-sharing program for construction of private rain gardens.

After substantial rain events in August 2007 and September 2008, which greatly impacted the entire community, the Village President and Board of Trustees appointed a 16-member Storm Water Task Force of residents who worked with staff and consultants to develop a stormwater master plan. In August 2010, a stormwater master plan, the *Flood Risk Reduction Program*, was approved, which outlined a multipronged approach for the Village to reduce the impacts of flooding where feasible and cost-effective. In response, the Village Board committed more than \$7 million to begin implementation of the *Flood Risk Reduction Program*.

Beyond the Village’s initial commitment of \$7 million, the stormwater system as a “utility” does not have a designated funding source. Therefore, stormwater system funding typically comes out of the Corporate Fund and includes: Public Works operations and maintenance, capital maintenance to repair and replace existing systems and potential new capital improvement projects as recommended in the *Flood Risk Reduction Program*.

User fees currently allow the Village’s sanitary sewer and potable water systems to function as enterprise utilities, meaning: (1) customers pay a rate based upon their pro rata amount of use of the system, and (2) the rate paid by customers covers all direct and indirect costs associated to fully run those utilities. Without a similar designated funding source, stormwater component costs must compete with other needs within the corporate fund. While this has allowed the Village to fund components of the stormwater system, capital planning and year to year commitments are impacted annually by other Village priorities.

To review whether opportunities exist to provide partial or full funding for the stormwater system to function as an enterprise utility, the Village retained AMEC Environment & Infrastructure to review potential long-term, sustainable funding sources. Among the various funding sources that were reviewed and analyzed as a part of this report, a stormwater utility fee emerged as the primary tool being utilized by communities today to provide stormwater-only funding. Stormwater utility fees are becoming more prevalent nationwide, with over 1,500 now in place in small and large communities. The report describes how a stormwater utility fee can be implemented so that it can function as an enterprise utility.

The chart below shows budgeted funding versus the funding recommended in the *Flood Risk Reduction Program*. With over \$3 million of total recommended annual needs, and just over \$1 million made available through various sources, a short- and long-term plan to establish ongoing revenues to fund and implement the *Flood Risk Reduction Program* is needed.

| Village Stormwater Needs: | Actual: | Recommended: | Difference: |
|--|-----------|--------------|----------------------|
| PUBLIC WORKS | | | |
| PW Operations & Maintenance - current | \$381,061 | \$381,061 | \$0 |
| PW Operations & Maintenance - recommended <i>Regular sewer cleaning program and major ditch maintenance</i> | \$0 | \$375,000 | (\$375,000) |
| CAPITAL PROJECTS | | | |
| CIP Standards for Capital Maintenance - current | \$800,000 | \$1,599,584 | (\$799,584) |
| Flood Risk Reduction Program Projects - recommended <i>Cost beneficial local projects Village-wide (60-year cycle) and one-time area opportunities</i> | \$0 | \$960,000 | (\$960,000) |
| ADMINISTRATIVE SERVICES | | | |
| Admin & Billing - current | \$0 | \$0 | \$0 |
| Admin & Billing - with SWUF | \$0 | \$50,000 | (\$50,000) |
| | | | (\$2,184,584) |
| Notes: | | | |
| 1) Current actual costs paid by corporate fund | | | |

This report includes further detail on how a stormwater utility fee could be implemented in Glenview, including impacts to customers, potential fee structures and an implementation schedule. This report is designed to be a reference for the Village Board, residents and staff to understand how the stormwater system could be sustained by a stormwater-only funding source. The report also outlines a potential path for the Village to consider on further implementation.

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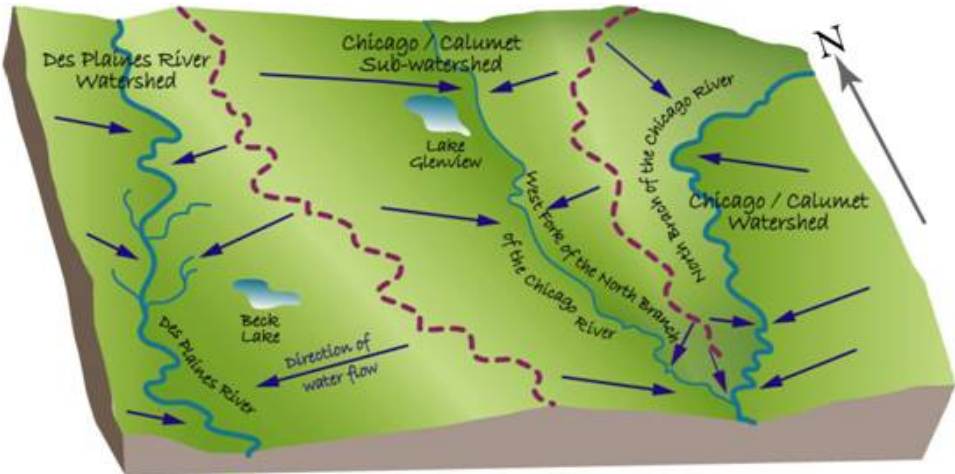
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Village of Glenview, Illinois

Stormwater Utility Fee Study

Background

The Village of Glenview is located in three watersheds as shown in the figure below. There is a significant amount of floodplain for a Village of approximately 13.5 square miles. With the mildly sloping topography of the Village small depths of overbank flows spread quickly to cover large areas. Large overbank flows as have been seen in recent years have had substantial impacts as the water flooded homes, caused sewer backups, and disrupted traffic flow in the community. These problems caused by flooding in the major streams impact multiple communities, requiring comprehensive regional solutions that are being planned and constructed by the Metropolitan Water Reclamation District (MWRD).



Glenview's Primary Watersheds

Glenview also has interior drainage problems, or problems not directly related to the three primary streams, during significant rainfall events. These problems are the results in some areas of undersized infrastructure, in other areas they are potentially due to maintenance needs, and in yet other areas they are due to the lack of storm drainage infrastructure altogether. In addition, 58 percent of the Village was developed prior to the implementation of detention standards.

The Village has been dealing with flooding and day-to-day stormwater management issues, such as regulatory and operational issues for many years. After the flooding events of August 2007 and

September 2008 and other extreme rainfall events that occurred over the previous 25 years, the Village performed a comprehensive study of drainage and flooding conditions in the community. This report describes the problems, the plan of action that was proposed to address the problems, and an overview of one component of the action plan, consideration of a stormwater utility fee as a funding source.

The Proposed Plan

After the flooding event of September 2008 a public meeting was held to discuss the flooding problems and to receive comments from the residents and business owners. More than 200 citizens attended the 2008 meeting which helped to establish the community's expected level of service for managing drainage and flooding problems and causes. In response to that meeting the Village embarked on a comprehensive process to define the flooding risks, their causes, and their solutions.

A key element of the process that was employed by the Village was the constitution of a Storm Water Task Force (SWTF). The SWTF was comprised of 16 Village residents. The SWTF met 14 times to discuss flooding problems, potential solutions, and prioritization of both the problems and solutions. More than 500 citizens participated in the public education, outreach, and involvement processes, including public meetings and an open house on stormwater management and flooding issues.

Program Goals

The result of this process was a guidance document that is referred to as the *Flood Risk Reduction Program (FRRP)*¹. As part of the development of the FRRP, three goals were defined for the stormwater management program

- Goal 1:** Eliminate sanitary sewer basement back-ups for homes served by the Glenview Public Sewer System.
- Goal 2:** Reduce the risk and impacts of over-foundation flooding on Village homes and businesses where practical and cost-effective.
- Goal 3:** Improve local drainage infrastructure to meet the Village's current design standards throughout the community

These goals reflect the realities of drainage system infrastructure in the Village of Glenview. The Village is 110 years old. Much of the infrastructure was developed during a time when there were no standards for sizing the infrastructure or for the materials that were used; therefore there are problems with

undersized infrastructure and spotty failures due to age. In some parts of the Village there is no infrastructure at all. There are sewer backups during high water. Houses were built in floodplain areas before there were regulations to control where homes and businesses could be constructed in proximity to waterways. As mentioned previously, 58 percent of the Village was developed prior to the adoption of detention standards.

Fundamental Principles

After discussing the numerous types, extents, and frequencies of the flooding problems in the Village, the SWTF identified five fundamental principles to direct the flood damage reduction efforts of the Village for achieving its stated goals. These principals included:

- Flooding continues to negatively impact a number of residents and businesses within the Village. Village efforts to address flooding should include actions that will lead to quick, visible results when feasible.
- Glenview drainage outlets are capacity limited. Where possible and cost-effective, the Village should take action to reduce the rate and volume of discharges to receiving sewers and streams.
- Flooding problems cannot just be pushed downstream. Solutions should strive to have no significant negative impact on flooding of downstream areas.
- Solutions should include public, private, local, and regional efforts.
- Costs to address all identified problems are very large; prioritization of efforts will be required.

Problem Prioritization

The SWTF determined that there are three primary categories of flooding problems in the Village of Glenview. These categories include sanitary sewer backups, structural flooding, and property flooding. In 2009 a technical evaluation was completed that attempted to identify the causes and extents of the three categories of flooding, as well as to provide preliminary numbers from which to estimate the costs of the solutions. The model analyses identified 84 locations expected to be subject to sewer backups and flooding problems. In order to understand the problem areas and the types of solutions that might be effective in addressing them, the SWTF developed a tiered system for prioritizing flooding issues. This system consists of 4 tiers that reflect differing levels of flooding severity and impacts. The list below defines the 4 tiers and provides the consultant's estimated cost to address most of the FRRP projects that are identified in each category. The cost estimates do not include regional or complex local project solutions.

- Tier 1:** Sanitary sewer and basement flooding (\$7.8 M)
- Tier 2:** Property damage and flooding of structures (\$45 M)
- Tier 3:** Surface flooding that impacts vehicle access (\$53 M)
- Tier 4:** Other localized flooding (\$21 M)

In this classification or prioritization scheme, Tier 1 represents the least acceptable circumstance, Tier 2 is next, and Tier 4 is the most tolerable category of problems that are sometimes referred to as “nuisance” flooding. A map showing the location of the identified problem areas for each of the 4 tiers is provided in the FRRP.

Action Plan

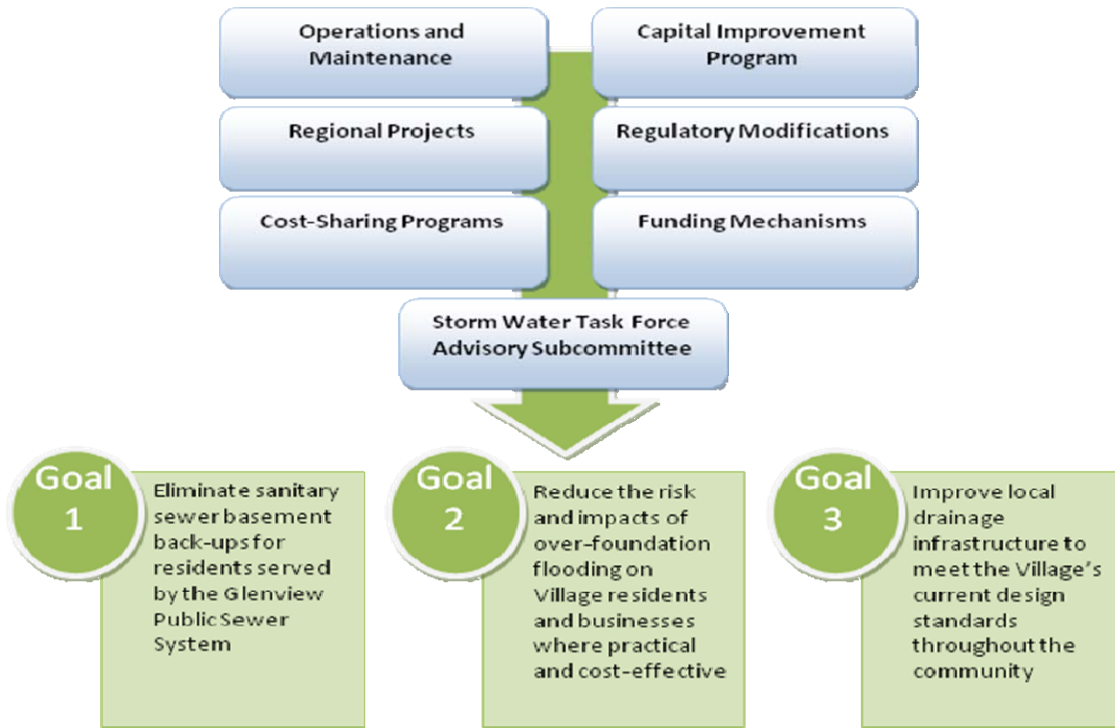
The SWTF in conjunction with staff and the consultant developed a proposed program to address the identified problems in a manner consistent with the program goals. The proposed program actions include short, medium, and long term efforts that will reduce the risk of flooding throughout the Village. The program also addresses existing and needed operational, regulatory, funding, and public involvement programs. The recommended plan of action developed in conjunction with the SWTF includes specific efforts in seven categories as described in the following pages.

Operations and Maintenance

Effective operation and maintenance of the Village’s sanitary and storm sewer systems is essential to the reduction of the risk of flooding due to sewer surcharging. Recommended operation and maintenance actions are proposed to maximize the effectiveness of the existing sewer infrastructure and reduce the risk of failures that could contribute to sewer surcharging, basement backups, or widespread street flooding. The activities that are proposed include inspection and maintenance of pipes, manholes, pump stations, grates, ditches, etc., as well as street sweeping.

Capital Improvement Program

Capital improvements to address flooding issues in Glenview will be the most visible and costly elements of implementing the *Flood Risk Reduction Program*. Capital improvement projects include “quick win” projects in both the sanitary sewer and storm drainage systems, Tier 1 basement backup elimination



Action Plan Elements

Source: FRRP

projects, Tier 2 and Tier 3 flood reduction projects (47 identified projects), Village wide reductions in flooding provided by regional detention, and cost share programs under the Storm Water Area Management Program (SWAMP). “Quick win” projects are defined as projects that are intended to achieve real, visible reductions in flooding risk in certain areas in a short period of time. These included both sanitary sewer and stormwater projects. Also included are enhancements to the technical criteria and various water quality and best management practice (BMP) projects, such as the installation of rain gardens and pervious pavement.

Regional Projects

Regional projects have been and will continue to be a source of significant potential for the reduction of flooding risks to residents of Glenview. Continued promotion, support, and participation in regional flood risk reduction projects are key elements of Glenview’s *Flood Risk Reduction Program*. Many of these projects are collaborative efforts with entities such as the MWRD, Cook County, or Lake County.

Regulatory (Permitting) Modifications

The Village maintains an Engineering Standards Manual that is used to guide all civil engineering design within the Village including both private redevelopment and public improvement projects. The FRRP recommends that sanitary sewer and single family residential stormwater requirements need to be

upgraded, the use of BMPs needs to be expanded, water quality management practices for compliance with the Village's National Pollutant Discharge Elimination System (NPDES) stormwater permit need to be publicized and encouraged, drainage standards for annexation need to be reviewed, and coordination with adjacent municipalities and other entities needs to be continued.

Cost Sharing Programs

Cost sharing programs have shown to be successful methods of encouraging property owners to become engaged in projects that improve quality of life, protect property values, or demonstrate good stewardship of the environment. As part of the Storm Water Task Force process, various cost-sharing programs were investigated and recommended for implementation, including:

- Overhead sanitary sewer service conversion
- Holistic drainage inspections
- Rain garden and rain barrel programs
- Village bulk purchases (services or products, such as rain barrels)

Funding

In order for any infrastructure improvement plan to be a success, sources of funding must be identified and available. Because the program defined by the FRRP includes both existing and needed elements new sources of funding must be identified in order to make significant progress on implementation of the program. The FRRP identifies the funding sources to implement this plan as a combination of one-time funding sources, such as federal matching fund grants and one time allocations from the Village, and continuing funding, such as sanitary sewer fees for the sewer back up or overhead sewer programs or a stormwater utility fee to support day-to-day stormwater management and/or capital program needs.

Storm Water Task Force Advisory Subcommittee

To ensure that stormwater management issues continue to be at the forefront of Village planning and to continue the momentum from the Storm Water Task Force process, an Advisory Committee is recommended to be established. This committee could be used to review stormwater work plan priorities with staff and then advise the Board on any necessary revisions.

Past Stormwater Projects

These recommendations were developed with the knowledge that over the past 40 years, the Village has supported and implemented a variety of projects and programs to address various stormwater

management and flooding issues. Major projects put in place to reduce the risk of flooding to Glenview property owners in the past include:

- The Southwest Storm Sewer Project.
- The Glenview Road Storm Sewer Project.
- The Techny Basin on the West Fork of the North Branch of the Chicago River.
- The Lake Glenview Detention Basin.
- Shermer Road Drainage and Detention Improvements.
- Many local drainage and detention projects completed by developers and the Village.
- The Village's SWAMP cost-sharing program for unsewered areas.
- A cost-sharing program for construction of private rain gardens.

The Village has also completed investigations and capital projects to reduce the rate and volume of rainfall-related inflow and infiltration into its public sanitary sewer system, and developed comprehensive hydrologic and hydraulic models of its drainage networks. These efforts provide a strong foundation for ongoing work focused on resolution of the remaining flooding issues that impact the community.

Glenview's Existing Stormwater Management Program

The existing stormwater management program in the Village of Glenview has a number of components and involves a number of departments. The stormwater drainage system infrastructure in the Village is quite extensive. The Village owns and operates approximately 1.4 million linear feet of storm sewer, approximately 3,800 catch basins, 3,600 storm sewer inlets, 3,900 manholes, 41 stormwater detention basins, and Lake Glenview. Inspection and maintenance of the infrastructure occurs on a scheduled basis with as-needed inspection and maintenance occurring based on citizen service requests. Over the three year period from 2009 through 2011 the Village received more than 650 drainage complaints. The types of complaints received include structure and street flooding, sewer backups, sump pump discharges, construction site runoff, downspout discharges, standing/stagnant water, and raised grade complaints. The complaints came from all over the Village.

A description of the existing stormwater management program, organized by department is provided in the following sections.

Public Works

The Public Works Department is responsible for keeping the physical stormwater drainage system and its components maintained and in proper working order. The key components of the stormwater operations and maintenance program in Public Works include:

- Infrastructure maintenance is mostly complaint driven, remedial maintenance. 10 years ago the goal was to clean and inspect the entire system, including storm sewers, catch basins, inlets, and ponds once every 7 years. Today this maintenance is on a cycle that is closer to 15-20 years. Maintenance is provided by a 2-person maintenance crew and a 4-person rebuild / repair crew.
- Ditch maintenance is not currently being performed. Based on interviews held in December 2011, staff believes that many of the ditches have lost up to 75% of their stormwater runoff conveyance capacity and others have been filled completely.
- Public Works currently maintains 41 publicly-owned detention ponds. The routine part of the detention pond maintenance is inspection and as-needed maintenance on restrictors.
- There is a monitoring and maintenance program for Lake Glenview that includes the inlet and outlet structures of the lake.
- The Village street sweeping program includes 9 complete sweeps of the Village annually; six occurring on a planned schedule and 3 performed on an as-needed basis. The 3 as-needed cleanings include leaf pick-ups and a system wide cleanup of winter debris. There are approximately 2,100 lane miles that are swept in the program.
- Whenever there is a stream blockage on a major stream, such as a fallen tree that could result in property damage or overbank flows the MWRD will clear the blockage from the stream when notified. Public Works typically hauls the debris away.
- Public Works provides support to public participation programs, such as creek cleanup events, by cleaning and trash/debris haul away after the events.

Capital Projects

The Capital Projects Department oversees the capital improvement program for the Village, provides engineering services for public projects, coordinates with MWRD on countywide stormwater programs, and manages development. The following bullets summarize the current efforts of Capital Projects in stormwater management.

- Capital Projects is responsible for stormwater management / infrastructure capital projects. Most of the projects are related to lining of storm sewers or the replacement of storm sewer systems as repaving occurs. These projects are paid for out of monies allocated to roadway projects resulting in a reduction in the lane miles of roadway projects that are competed annually. These are Pay-

As-You-Go projects that are paid for from Motor Fuel Tax, the Corporate Fund, other designated local funds, and Grant (when available) revenues.

- Bank stabilization projects are the responsibility of MWRD when there is a building within 50 feet of the eroding stream, otherwise they may become small capital projects if the problems created are significant.
- There is an overhead sewer cost share program to alleviate sanitary backups. The Village shares in the project costs at a 50% level up to maximum contribution of \$7,500. There have been approximately 3,200 homes identified that would qualify to participate in this program, though not all will participate.
- When residents have drainage issues the Village will assist the homeowner in developing a mitigation plan by paying half of the contracted \$800 fee for an engineering inspection and report.
- Through the SWAMP program the Village pays 40% of the cost of storm sewer line installation and 100% of the backfill cost in unsewered areas. The Village will pay 100% of the cost of trunk sewer extensions. Most of the identified projects have been completed.
- The FRRP identifies capital projects, including cost estimates. The plan focuses on flood proofing and infrastructure improvements to bring existing systems up to Village standards.
- MWRD has a role in planning and funding regional flooding solutions. There are 2 regional flooding solutions in MWRD's plans that will favorably impact flooding problems in Glenview. A design contract was recently awarded for one of those two projects. The Village of Glenview supports and advocates for regional projects because they are the most effective approach to dealing with significant flooding problems associated with the large streams.
- Capital Projects provides compliance services for the Village with the small municipal separate storm sewer system (MS4) permit that was promulgated by the Illinois Environmental Protection Agency (IEPA). A major part of this compliance effort has been the distribution of materials promoting good stewardship of stormwater runoff and green infrastructure practices. The stormwater program page on the Village website has multiple links to materials on these subjects. The Village spends approximately \$25,000 annually on these compliance program elements.
- Capital Projects administers a rain garden grants program. Homeowners can receive a reimbursement of 50% up to a maximum of \$1,000. The budget for this program is \$15,000 annually.
- Capital Projects also promotes rainwater harvesting through the use of rain barrels which can be purchased at a reduced price (\$50 each) as compared to buying from commercial sources.

Inspectional Services Division

Inspectional Services provides a wide range of inspection and code enforcement services, including complaint-driven stormwater violation inspections. The goal and top priority of the stormwater inspections is to achieve compliance and the inspection staff work with property owners to achieve compliance without issuing citations where possible. At the current time the stormwater related costs for Inspectional Services are not identified as a separate budget line item.

Administrative Services / Finance

The Administrative Services Department provides a number of support services to the stormwater management program, including:

- Customer service support is provided through the Resolution Center. Street flooding and sewer backup calls are routed to Public Works; all other drainage calls are routed to Capital Projects / Inspectional Services.
- GIS, mapping, and database support are provided to all elements of the stormwater program.

Program Costs

The departmental budgets for stormwater management in Glenview are discussed below. The Fiscal Year 2012 (FY 2012) budgetsⁱⁱ represent current spending levels and are used as the basis of the evaluation. The Public Works stormwater budget for FY 2012 is shown in the table below. The services covered by this budget are street sweeping, system maintenance, and repair and replacement of failing inlets, pipes and catch basins.

FY 2012 Public Works Stormwater Budget

| Item | Budget |
|-----------------|------------------|
| Personnel | \$200,000 |
| Operating | \$100,000 |
| Sweeper CERF | \$18,461 |
| Sweeper O&M | \$22,600 |
| Insurance | \$20,000 |
| Supplies | \$20,000 |
| Subtotal | \$381,061 |

The Capital Projects stormwater budget for FY 2012 is shown below. The budget includes the following recurring costs: drainage system repair and replacement on roadway resurfacing and reconstruction projects; storm sewer lining; closed circuit TV inspection, and rain garden and engineering inspection cost share programs. The FY 2012 budget also includes some onetime costs for a FEMA matching fund grant and coordination with a regional detention project performed by MWRD. Without the onetime allocations the Capital Projects stormwater budget for FY 2012 is \$1,034,321.

FY 2012 Capital Projects Stormwater Budget

| Item | Budget |
|------------------------------|--------------------|
| Repair and Replace (Roadway) | \$767,571 |
| Strom Sewer Lining | \$146,750 |
| Rain Gardens | \$15,000 |
| TV Inspections | \$75,000 |
| Engineering Inspections | \$30,000 |
| Onetime expenses | \$744,600 |
| Subtotal | \$1,778,921 |

The Capital Projects budget is projected for five years at a time in the Capital Improvement Program (CIP) where both the funding sources and expenditures for the various infrastructure programs in the Village are projected.

Neither Inspectional Services nor Administrative Services specify a stormwater line item in their budgets, although resources from each support the stormwater management program.

Funding Needs

There have been a number of program needs and related costs identified. The largest of the costs is the estimated \$125 million in capital projects that was identified in the FRRP. These projects will take a number of years to complete, a fact recognized by the SWTF when they recommended the development of prioritization schemes that would allow projects in each of the 4 tiers to be completed.

The SWTF also recommended in the FRRP that the Village increase maintenance of the stormwater drainage infrastructure to keep the system operating as close to design capacity as possible and to lengthen its expected useful life. These goals are consistent with the desire to once again have the inspection and maintenance cycle for the entire system at 7 years rather than the current 15 – 20 years.

Doubling of these efforts could raise the annual Public Works stormwater operating cost to approximately \$800,000, an increase of approximately \$400,000.

Another optional funding goal would be to move the annual cost of stormwater drainage system repair, replacement, and lining associated with resurfacing or reconstructing roadways to another funding source so that more funding would be available for the road programs. Based on the FY 2012 budget this would represent a transfer of approximately \$787,000 to a different funding source.

Other funding needs have been identified but not quantified. For example, as the IEPA changes its NPDES stormwater permitting rules and the countywide ordinances and requirements of MWRD are adopted the annual funding level (currently \$25,000) for support of the municipal NPDES stormwater permit will more than likely double. The State of Illinois is also finalizing total maximum daily loads (TMDLs) for the local streams. The implementation plans for the TMDLs will allocate pollutant reduction goals to the many pollutant sources, including stormwater runoff in the watersheds.

Stormwater Funding Methods

As stated in the “Funding” element of the FRRP Action Plan, stormwater utility funding is an alternative that can be used in many ways to fund all or part of a stormwater management program. This assessment of the feasibility of user fee-based funding for stormwater management in the Village of Glenview examined a full range of revenue sources and funding mechanisms. Even though user fees are the stated focus of the study, other methods of funding stormwater management program elements were reviewed. Many of these funding methods can add equity to the funding program when used in conjunction with utility fees. The funding methods that were reviewed include:

- Corporate / General Fund appropriations
- Stormwater user fees
- Special assessments
- General obligation and revenue bonds
- Fee-in lieu
- System development charges
- Plan review, development inspection, and special inspection fees

- Impact fees
- Recapture fees
- Federal and state funding opportunities (Grants)

Of these funding methods only two have the revenue generation capacity to fund the entire stormwater management program; the Corporate / General Fund and stormwater user fees. The other funding methods are either applicable to funding very specific program services (i.e.; plan review and inspection fees), are methods of borrowing money (i.e.; bonding), or are programs that have no guaranteed revenue stream (i.e.; state and federal grants). Each funding method is described below, followed by a table that summarizes the pros and cons of each method.

Corporate / General Fund Appropriations

Corporate / General Fund revenues are the most common source of funding for municipal stormwater programs. For the most part, the revenues in the Corporate Fund are:

- Derived from a wide spectrum of property taxes, income taxes, exactions from service providers (i.e., utility taxes), etc.
- Subject to market values of taxable properties and economic conditions for income-based revenues.
- Raised for the general purposes of government and are therefore subject to allocation for many purposes.

Municipal services that are funded by the Corporate Fund are provided to all properties, regardless of taxable status.

Dedicated levies, based on property, sales, or other taxes, are sometimes used to fund stormwater management programs, or components of the programs. These types of tax levies have been used very successfully in some communities to either partially or fully fund stormwater management programs.

Stormwater User Fees

Stormwater user fees have become an increasingly popular method of funding stormwater management programs. There are currently more than 1500 stormwater utilities in the United States. Stormwater utility fees are by no means the only or best way to fund stormwater programs in every instance, but many

communities have weighed their options and decided that a stormwater utility makes sense in their particular circumstance, including these Illinois communities:

| | |
|---------------|-----------------|
| Aurora | Normal |
| Bloomington | Northbrook |
| East Moline | Rantoul |
| Freeport | Richton Park |
| Highland Park | Rock Island |
| Moline | Rolling Meadows |
| Morton | Tinley Park |

A stormwater utility may be established as a funding mechanism, as a new service line item under an existing department, or as a self-sufficient department of local government. In most cases the utility is established as a funding mechanism that ensures adequate funding for stormwater management, just as may be done for water, sewer, solid waste, or other government services.

The popularity of the utility approach is tied to the nature of enterprise funding programs. An enterprise fund is established for stormwater management and a user fee is established by ordinance to fund the enterprise. The establishment of the enterprise guarantees by ordinance that the funds collected for stormwater management cannot be redirected for unrelated uses. The funding level and therefore the fee charged to properties is based on the program elements that will be paid for by the charges. The program scope, or level of service, can range from everything stormwater to only specific programs, such as capital, compliance, operations and maintenance, etc. The fee is calculated by determining the costs of providing the desired level of service and then distributing the costs based on the demand that each property places on local government for service. The most common basis for the user fee rates is the potential rate and/or volume of stormwater runoff from each property. This is discussed in more detail later in the report.

There is a lot of flexibility in the design of a rate structure for stormwater user fees. The rate structure can be as simple as the fee paying for the entire program, or may be made more equitable to ratepayers by adding specialty fees, such as plan review and inspection fees, that pay for services that are only provided to specific properties on a one time basis.

Equity in the rate structure is frequently provided by including a credit program. A credit program allows properties to reduce their fee by providing a prescribed level of on-site stormwater runoff control that results in a reduction in the level of effort required for the municipality to provide the service. An example of a stormwater utility credit would be a reduction of the fee charged to a property because the owner has constructed a detention basin that is larger than required by the Village. The excess storage capacity provided by this basin can help to mitigate the effects of runoff from adjacent properties. The detention basin in this example has in effect lowered the cost to the Village for managing the runoff from the adjacent properties. The upside to including a credit program in the rate structure is that it adds equity; property owners can reduce their rates by providing certain on-site stormwater management activities. The downside is the unknown level of participation and the impact the credits may have on revenues. The amount of staff time that will be required to administer the program varies with the breadth of credit options and the adopted credit application process, but is typically highest during the first year of the program.

Special Assessments

Special assessments are a fee or tax assessed to a property for receipt of a direct benefit from local government. As opposed to a general tax, the fee or tax is billed only to those properties that are the direct beneficiaries of the service that was provided. Special assessments can be used to pay for improvements or services that have a specific geographic scope, which can be as small as a couple of properties, or as large as several blocks. Special assessments can require a significant level of justification.

Because special assessments cannot be used to pay for services that provide general benefits to properties, they obviously cannot be used to pay for an entire stormwater program. Special assessments can be a valuable tool in a stormwater utility rate structure to recoup the cost of providing services that are definitely above the defined level and / or extent of service of the utility. For example, properties in an unsewered area wishing to resolve chronic street flooding problems could be subject to a special assessment to have the Village install storm sewers. Another example would be that if it is beneficial to several properties to have a severe erosion problem addressed in an area outside the defined drainage system, such as in a backyard drainage ditch, a special assessment could be used to recover the cost of the project from the benefiting properties.

General Obligation and Revenue Bonds

Bonding is not a revenue source but a borrowing mechanism. Through the use of bonds funding of major capital improvements may be expedited relative to procuring funds through the annual budget process. Many municipalities prefer not to incur long term debt if it can be avoided and will utilize pay as you go financing for all capital improvement projects, or they will use a combination of bonding and pay as you go to limit the amount of long term debt.

When bonding for capital improvements the debt must be secured either by the general revenues of the municipality or county (general obligation bonds) or by a dedicated revenue stream, such as revenues produced by a stormwater user fee (revenue bonds). In the later case, the utility must be up and running for a few years and have a history of reliable collections before the bond banks will accept the obligation of the revenue stream for servicing the debt.

In-Lieu of Construction Fees

Historically, in-lieu of construction fees have provided local government an alternative to universal on-site detention systems. Rather than encouraging a proliferation of small, often times ineffective detention ponds, a fee is collected to help pay for larger, more strategically located, much more efficient regional facilities. The fee amount is typically based on the equivalent cost of providing on-site detention that would meet local standards, including the estimated costs of engineering design, land and/or easements, construction, contingencies, and operation and maintenance for the design life of the facility. Among the many benefits of the approach is that it can make public inspection and maintenance responsibilities more manageable by reducing the number of facilities to be managed.

In the instance where regional detention is needed quickly to manage the impacts of development pressure, a fee in lieu program may be tied to or replaced by system development charges or latecomer fees, approaches that are more appropriate for building the regional facilities before collecting fees from properties that utilize them.

System Development Charges

System development charges, sometimes referred to as capitalization charges, provide a mechanism whereby the public recoups its front-end investment in a publicly owned and operated stormwater system from developers as they build out the contributing drainage area. This approach is usually a more economical and prudent long-term system development policy than attempting to increase service capacity to meet the demands of growth on a case by case basis as it occurs.

Connection fees are a related capital recovery method whereby a share of the public cost of providing adequate stormwater management capacity is recovered from new development and redevelopment projects.

Recapture Fees

Recapture fees are not a revenue source. They are a means of properly distributing capital investment costs among several properties when a facility is built by one developer with excess capacity to accommodate adjacent or nearby properties that are to be subsequently developed in the same drainage area. This type of fee is commonly used for water and sewer system extensions. They are very similar to system development charges, but the funding source for the upfront construction of facilities is private rather than public.

Plan Review and Development Inspection Fees

The Village of Glenview has been reviewing stormwater plans in conjunction with development plan approvals for many years. The rationale for including such fees in a rate methodology is based on the “origin of demand for service” concept, in which costs are apportioned only among those whose needs require the service. Not all “service” provided by a stormwater management program is uniform throughout a community. Some services, such as plan reviews and inspections, are provided only to a specific clientele. Instead of distributing the cost of such services among all user fee ratepayers, special service fees can be adopted which apply only to the parties who are served.

Impact Fees

Impact fees have been associated with a variety of public infrastructure programs across the country. They are often popular with existing residents who wish to see developers pay the entire cost of new capital facilities. Naturally, they are just as often highly unpopular with developers. Specific applications of this type of funding method have been the subject of a great deal of litigation nationally. An unusual aspect of impact fees is that state courts around the country have been notably inconsistent in their definition of them and in decisions on their application.

Impact fees are typically limited to situations in which the impact of new development on existing infrastructure systems is: 1) measurable and certain; 2) of definable geographic or systemic extent; and 3) quantifiable in terms of the incremental capital investment that will be required to maintain (not attain) an adequate service level. The final point is critically important in terms of stormwater management

systems. Impact fees cannot be used to bring an inadequate system up to an adequate service level, and thus are not useful in correcting the many problems that might currently exist in the stormwater systems in Glenview. Impact fee revenues must also be earmarked for specific projects or uses, must be expended relatively quickly, and, if not spent for the stated purpose, must be returned to the developer.

Stormwater Funding Methods Pros & Cons

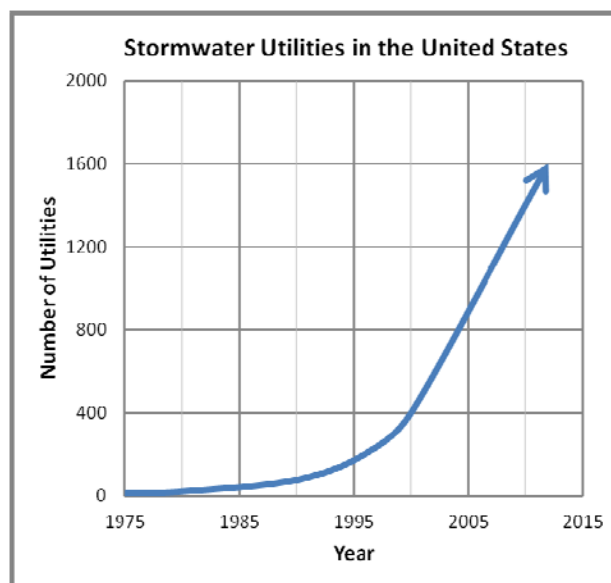
| Pros / Cons | Corporate Fund | Utility Fees | Special Assessments | Bonds | Fee In Lieu | System Development Fees | Recapture Fees | Plan Review Fees | Impact Fees | Federal / State Grants |
|--|----------------|--------------|---------------------|-------|-------------|-------------------------|----------------|------------------|-------------|------------------------|
| Pros | | | | | | | | | | |
| Can support cost of entire stormwater program | ✓ | ✓ | | | | | | | | |
| Cost recovery for specific service / project only | | | ✓ | | | | | ✓ | | |
| Funds can only be used on specific projects | | | | | | | | | | |
| Adequate, stable funding on long term basis | | ✓ | | | | | | | | |
| Recovers prior infrastructure investment | | | | | | ✓ | ✓ | | ✓ | |
| Allows regional solutions rather than on-site | | ✓ | | | ✓ | | | | | |
| Allows projects to be built sooner | | | | ✓ | | ✓ | ✓ | | | |
| Flexibility in structure of fee / recovery | | ✓ | | ✓ | | ✓ | ✓ | | | |
| Helpful for funding "opportunity" projects | | | ✓ | | | | | | | ✓ |
| Can be used to fund MS4 compliance | ✓ | ✓ | | ✓ | ✓ | | | | | |
| Charged only to properties that impact system | | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Incentives for responsible actions | | ✓ | | | | | | | | |
| Has been challenged and upheld in courts | ✓ | ✓ | ✓ | | | | | | ✓ | |
| Equitable: charges related to service received | | ✓ | ✓ | | ✓ | | | ✓ | ✓ | |
| Common governmental revenue source | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| Can be equity builder in utility rate structure | | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| Cons | | | | | | | | | | |
| Cannot generate funds for entire program | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Borrowing mechanism rather/ long term debt | | | | ✓ | | | | | | |
| Availability uncertain year-to-year | ✓ | | | | | | | | | ✓ |
| Constraints on use of funds | | | ✓ | | ✓ | | | ✓ | | ✓ |
| Risk that development doesn't build out | | | | | | ✓ | ✓ | | | |
| Significant reporting and record keeping | | ✓ | ✓ | | | | | | ✓ | ✓ |
| Fund rarely covers complete cost of service | | | | | ✓ | | | | | |
| Cost of capturing revenue can be high | | ✓ | | | | | | | | |
| Difficult to find land in built out community | | | | | ✓ | | | | | |
| Use of funds limited by location (i.e.; watershed) | | | ✓ | | ✓ | | | | | |
| Time constraints / sunset provisions | | | ✓ | ✓ | | | | | ✓ | ✓ |
| Infrastructure development at public's expense | | | | | | ✓ | | | | |
| Infrastructure development as private expense | | | | | | | ✓ | | ✓ | |
| Results in higher levels of imperviousness | | | | | ✓ | | | | | |

Federal and State Funding

State and federal funding generally falls into the categories of grants and loans. The grants may pay all the costs of a project, or may require some level of local participation, or “match.” Most state and federal funding opportunities are limited in scope and might be used to fund “opportunity” projects, but not to fund an entire program or to be available on a regular or planned basis. Many state and federal grant programs may also have strings attached that restrict their use in complying with regulatory programs, such as the Municipal NPDES Phase II Permit.

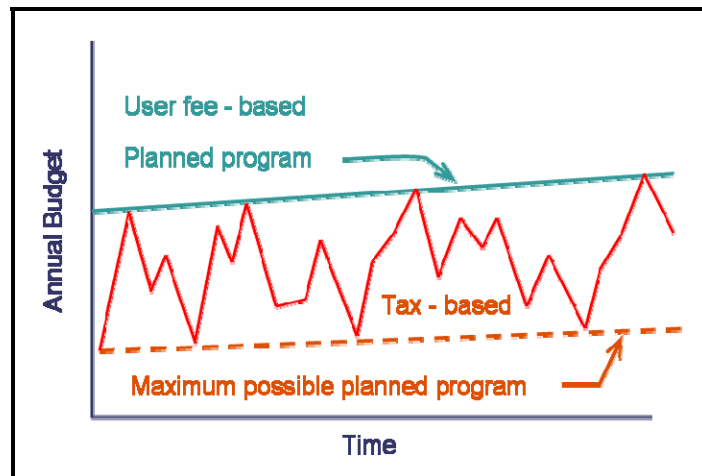
Stormwater User Fees

Stormwater user fees, sometimes referred to as “utility fees” or “service charges”, have become an increasingly widely used and accepted method of funding stormwater management programs (see figure below). There are more than 1500 stormwater utilities in the United States. These cities found that in their specific circumstances the need for a source of funding that is adequate to run a stormwater program, dedicated to the stormwater program, and that distributes costs equitably, pointed to the conclusion that a user fee-based system, like those used for water, wastewater, and other infrastructure-related utilities, made the most sense. They found that with a stable, dedicated source of funding a stormwater management program can be planned and implemented without the typical year to year competition for



Growth of Stormwater Utilities

funds and the resulting annual variations in program funding levels. As can be seen in the figure below, the impact of the historic stormwater program funding levels must be considered when determining the annual level of service that a community can provide in a tax-funded program. With user fee-based funding a plan is developed and agreed on, the cost of providing the agreed upon level of service is determined, and a rate is established that will deliver the necessary funding.



Tax Based Versus Fee Based Planning

Nationally, there are a wide range of monthly rates for stormwater utilities. For the average single family residential ratepayer the fees range from \$2.00 per month up to \$20.00 per month, depending on the elements of the stormwater management program that is being funded by the fees. The national average charge for single family residential properties is approximately \$4.50 per month. Other classes of property typically pay fees that are based on the measured amount of impervious surfaces on the property.

Funding Philosophy

Every municipal program has a funding source. For most programs there are not one or two specific features of the program that have a definitive cost causation factor on which to raise revenue to fund the program. Libraries, police protection, and other such public services fall into this category. Some municipal infrastructure programs on the other hand do have characteristics that allow municipalities to link the cost of providing the service to measurable demands for service. Water supply is a good example of a service whose demand for service can be directly measured by the use of water meters. Road maintenance and construction are at least partially funded by the proceeds of motor fuel taxes and in some cases wheel taxes. The funding philosophy behind motor fuel taxes is that the more you use the roads the

more fuel you buy. Therefore if you are taxed on fuel purchases you are paying for the demand for service you place on the transportation system.

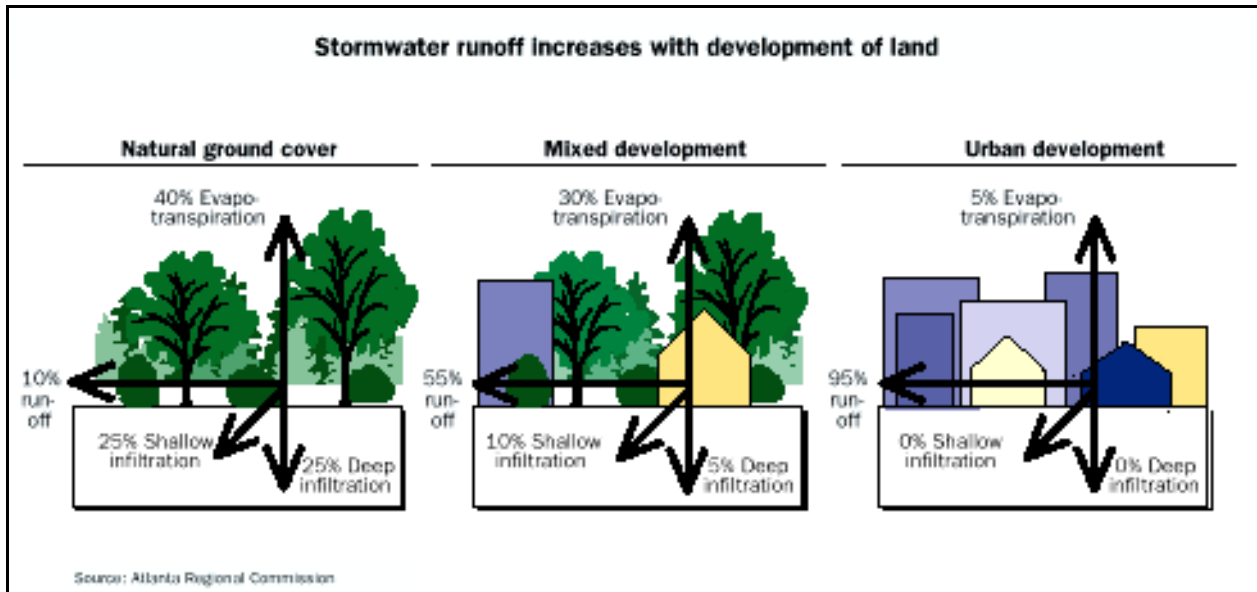
The funding philosophy behind other infrastructure programs is that you pay based on the service capacity that the municipality or other service provider must provide in order to deliver the level of service demanded by the customer. Good examples are cable television and internet service, wastewater service, and stormwater. In the case of cable the subscriber pays a flat rate per billing cycle that is based on the estimated cost of having that service available 24 hours a day, whether it is used for 1 hour a day or 18 hours a day. Wastewater service fees are based on the anticipated waste load management demand that each user may exert on the system. Since there is a seasonal relationship between water use and wastewater production most wastewater service providers charge based on measured water use. For stormwater management programs, fees are based on the potential demand for service that a property places on the municipal storm drainage system and program. Because impervious areas have been shown to be the most prominent factor in determining the runoff potential from individual properties in urban areas, imperviousness is often used as the measure of demand that each property exerts on the municipality for this service.

A key tenet of a stormwater user fee is that all properties generate stormwater runoff and therefore all properties contribute to the funding of the stormwater management program. A property that has six and a half acres of impervious surface area (rooftops, parking lots, driveways, etc.) that is owned by a not-for-profit entity will generate the same runoff as if that property were owned by any other entity and therefore is charged the same fees.

The only exception to the guideline that all properties pay is that the public right-of-way is typically not charged because that is where the municipal storm sewer system is located for which funding is being sought. In most communities, including Glenview, the roadways themselves are designed to assist in the conveyance of stormwater runoff and as such are a part of the system too. Other municipal properties are charged a fee like all other properties.

What is the basis for billing properties?

Stormwater utilities bill properties based on the demand for services that the property is estimated to generate. This demand for service is estimated as the potential stormwater runoff that would be produced by a property. Numerous studies (Nationwide Urban Runoff Programⁱⁱⁱ, Illinois State Water Survey^{iv}, etc.) have shown that as development intensity increases the amount of stormwater runoff from a property



also increases. As shown in the figure above, increasing impervious ground cover reduces the ability of the ground to infiltrate and for vegetation to capture and utilize rainwater, resulting in increased runoff which must be managed by the local municipality

Because this strong relationship exists between the amounts of impervious surface on a property and the rate and volume of runoff it produces, most stormwater utilities bill based on the amount of impervious surface on the property. Others base their bills on a combination of both the impervious and pervious areas on the properties. For example, in the figure below we see a typical single family residential property in Northwest Glenview. If we measure the impervious areas on the property, shaded purple in the second image, we have the basis for billing a stormwater fee to the property.



.Single Family Residential Lot Impervious Areas

We can bill based only on the measured impervious area, or we can bill based on the relative amounts of impervious and pervious (un-shaded) areas within the property boundaries (yellow lines).

In the figure below we see a commercial property on West Lake Avenue. The measured impervious areas in the image on the right would be the basis for billing a stormwater utility fee to this property.



Commercial Property Impervious Areas

What is the revenue potential of a stormwater utility fee in Glenview?

The amount of revenue that can be generated by a stormwater utility in the Village of Glenview is relatively straightforward to estimate because the Village has access to information in its geographic information system (GIS) that defines the impervious area Village-wide. Close inspection of the data indicates that the digitizing, which is based on detailed aerial photography flown in 2007, 2008, and 2009 has a level of accuracy of approximately 95%. Review of the GIS data shows that there are approximately 93 million square feet of impervious area inside the corporate limits of the Village of Glenview and outside the public right-of-way. Based on this level of imperviousness it is estimated that a charge of \$1.00 per month per 1,000 square feet of impervious area would generate \$1.10 – \$1.25 million per year.

For a typical single family residential property owner in Glenview, the total impervious area, including rooftops, driveways, patios, and sidewalks appears to be approximately 3,675 square feet. By equating this “typical” single family residential level of impervious area (known as an equivalent residential unit, or “ERU”) to the revenue projection above, one can derive the revenue that might be associated with several typical monthly residential charges as shown in the table on the following page. The revenue

projections have been decreased by 5% to account for typical revenue modifications, such as credits for on-site stormwater management and uncollected payments.

Stormwater Utility Revenue Generation

| Monthly Rate Per ERU | Annual Revenue |
|----------------------|----------------|
| \$ 1.00 | \$ 305,000 |
| \$ 2.00 | \$ 610,000 |
| \$ 3.00 | \$ 915,000 |
| \$ 4.00 | \$ 1,220,000 |
| \$ 5.00 | \$ 1,525,000 |

If a stormwater utility fee were to be billed using the Village’s existing utility billing system the fees would be aggregated to a quarterly amount and included on the existing bills.

What unique strategies have been employed in stormwater fee rate structures?

A stormwater utility rate can be structured in many ways. Municipalities have a great deal of latitude when it comes to designing a rate structure. The options are numerous and include the use of different sources of funds for different parts of the program, phasing in programs and thus costs. Some examples include:

1. The Greater Elkhart County Stormwater Partnership in Indiana collects stormwater utility fees to pay for a jointly managed, co-permitted municipal stormwater permit (NPDES) program. The fees cover only the costs of compliance with the MS4 permit.
2. The Champaign, Illinois City Council has approved a plan that would use sales tax revenue to pay for bonded capital improvements and stormwater utility fee revenue to pay for day-to-day program costs and for pay-as-you-go capital improvement projects.
3. The Morgantown Utility Board (WV) established a stormwater utility whose services, costs, and related fees were ramped up over the first year of operations. The fees for a typical single family residential property began at \$1.00 per month in the initial year of service and increased to \$3.25 per month in the second year when the operations and maintenance and capital programs and staff were in place and ready to go.

What are the next steps in setting up a stormwater utility?

The planning and implementation phases of a stormwater utility have four basic components: an Expenditures Plan, a Revenue Plan, a Billing Plan, and a Public Outreach Plan. Each of these four plans and what tasks are performed by phase is described briefly in the following paragraphs.

Planning Phase Tasks

The steps to complete the planning of a stormwater utility include the development of an expenditure plan, a revenue plan, a billing plan, and an outreach and education plan. The **expenditure plan** is a business plan that describes what stormwater management services will be provided, on what schedule, and at what cost. This plan typically encompasses a 5- or 10-year planning horizon. The expenditure plan typically includes a needs analysis. In the case of Glenview, this analysis has been performed by the SWTF and the adoption of the FRRP by the Board.

The **revenue plan** defines how the utility's revenue will be created. This plan includes: the development of a rate structure; determination the basis for setting rates (i.e.; impervious area on each lot, impervious plus gross areas, etc); identification of equity builders such as a credit and incentive policy; identification of funding sources other than a fee; rate modeling, and a draft stormwater utility ordinance.

A **billing plan** addresses how the bills will be delivered to the customers. How will the master account file information be delivered to the Village for incorporation into the billing system? When does it need to be delivered? Will the bills be sent to property owners or occupants? What information will go on the bill? What customer service tools are needed? Preliminary investigation indicates that the current billing system, MUNIS™ (Tyler Technologies) has the capability to add another line item as well as the ability to add specific customer service instructions related to a stormwater line item.

An **outreach plan** identifies the actions necessary to communicate the program with the citizens of Glenview. The plan will target the community at large as well as those ratepayers that might be impacted significantly by the fee. The plan typically includes a citizen stakeholder process, one-on-one meetings with key potential ratepayers, and press releases on the Village website, in the local media, and at public meetings. The stakeholder group typically includes technical advisors as well as non-technical members that represent peer groups, such as churches, the Chamber of Commerce, schools, park districts, environmentalists, and residents whose property is subject to flooding. Members of the current Stormwater Task Force Subcommittee may make up a portion of this group.

As part of project management of the planning phase an implementation plan is developed. The implementation plan will detail the steps to be taken if the stormwater utility ordinance is adopted by the Board through the first billing cycle.

Implementation Tasks

The implementation tasks include implementation of the revenue, billing, and outreach plans. For the revenue plan the policies decisions of the plan are implemented during construction of the billing database. Updates to the rate model are made as the database is completed. The credit and incentive technical manual is completed and training, if desired, is provided to staff and to local designers.

The **billing plan** implementation is the key task of this phase. Digitizing of impervious surface area is finalized for every parcel and then the master billing account file entry for each parcel in the Village is computed. Once the master account file is complete it would be delivered to the Village, uploaded to the MUNIS™ billing system, and sample bills would be generated and checked to verify the accuracy of the uploaded information. Customer service tools, such as a Frequently Asked Questions guide would be produced, and customer service training would be provided. Another key deliverable at this stage of the process is the development of a master account file maintenance guide that instructs Village staff on the tasks required to sustain an accurate billing database.

The **outreach plan** implementation will continue and would include additional meetings with key ratepayers, general dissemination of information on the utility using outreach materials such as billing inserts, website bulletins, etc., and outreach presentations would be made to neighborhood and trade groups.

Schedule

The schedule for implementing the tasks outlined in the planning and implementation phases of the process would be dependent on the actual scope, but would be approximately 15 to 18 months depending on whether a stakeholder process is included and whether the Village adopts a stormwater utility ordinance before commencing the construction of the master account file.

The activities would occur generally in the order they appear in the discussion above, with several of the tasks in the development of the four plans being performed with overlapping schedules. The final determination of whether a stakeholder process will be included and exactly what their objectives will be would impact the implementation schedule.

Stormwater Utility Implementation Cost

A firm price cannot be provided until several scope decisions are made, such as whether there will be a stakeholder process and if so how many times it will meet. Based on experience in other communities it is estimated that the cost of stormwater utility implementation would be between \$150,000 and \$200,000,

In addition, staff time will be required at multiple points in the implementation process, including; discussion of policy recommendations, implementation of outreach tasks, becoming familiar with the billing database, familiarization with customer service tools, processing of credit applications. In addition, input from the Board will be required in order to vet policy recommendations and provide final guidance on the policies.

Conclusions

The Stormwater Utility Fee Study was a recommended action of the SWTF in the *Flood Risk Reduction Program*. The FRRP and previous studies identified program needs and order of magnitude costs for stormwater infrastructure and program improvements. In order to determine the feasibility of a stormwater utility fee, the recommendations of these studies were used as a backdrop for this study in order to keep in perspective not only the proposed program upgrades but also the significant stormwater programs and projects that are being and have been provided by the Village of Glenview.

A review of funding methods that are utilized by municipalities for stormwater programs was performed. The advantages to utility fee based funding are numerous.

- Stormwater utilities are a stable source of funding. The revenue requirements are program-driven and therefore planned to insure the needed level of funding year in and year out.
- Stormwater utilities are a dedicated source of program funding. The fees are dedicated to a stormwater enterprise and may not be used for any purpose other than stormwater management.
- Stormwater utilities are an equitable source of program funding. Fees are based on the runoff producing characteristics of the property rather than on taxable values of properties or income levels of the community.
- Stormwater utilities are flexible. Rate structures can be designed so as to charge fees to fund only a portion of the stormwater management program, the entire program, or they can be designed to

allow the program to transition to the fee as a funding source over time. Stormwater utilities can also provide incentives for on-site stormwater management practices of the rate payers.

In the case of the Village of Glenview there are some specific advantages.

- A stormwater utility could potentially be used to make additional funding available for road projects by removing stormwater infrastructure costs from existing roadway project funding.
- A stormwater utility could be used to make money available for increased stormwater drainage system maintenance and as a result lengthen the useful life of stormwater infrastructure.
- A stormwater utility could be used to provide additional funds for either pay-as-you-go or bonded capital projects that have been identified by the SWTF in the FRRP.

ⁱ MWH, Inc., *The Village of Glenview Flood Risk Reduction Program*, April 2010, 69 p

ⁱⁱ Fiscal Year 2012 Approved Annual budget, Village of Glenview

ⁱⁱⁱ United States Environmental Protection Agency, 1983, *Results of the Nationwide Urban Runoff Program*, Vol. I., *Final Report*. USEPA, Washington, D.C.

^{iv} Stall, J.B., M.L. Terstriep, F.A. Huff, 1970, *Some effects of urbanization on floods*. Illinois State Water Survey, Champaign, Illinois, Reprint 133.