

Village of Downers Grove

Long-Range Plan 2013 - 2015 *2014 Meeting 3*



Issue	<p>Revenues generated from stormwater utility fees fall short of the cost of operating and maintaining the stormwater management system to the recommended level of service. In 2012, the Village created a plan for establishing stormwater fees that would increase revenues over a 15 year period, allowing the Village to go from the current level of service to the recommended level within that time frame.</p> <p>During the period when revenues fall short of the cost of providing the recommended level of service, the Village must decide how to spend the stormwater fees recognizing that the recommended level of service will not be achieved.</p> <p>There are two objectives:</p> <ol style="list-style-type: none"> 1) Review and potentially modify the plan for establishing stormwater utility fees. 2) Review and potentially modify the plan for prioritizing stormwater maintenance and capital expenses.
Actions Completed	<ul style="list-style-type: none"> • Implemented a Stormwater Utility. • Constructed 53 stormwater management projects from 2008 to 2014 at a cost of \$27 million to alleviate flooding in areas underserved by stormwater infrastructure or with persistent drainage problems. • In response to the flood of April 2013, completed a report identifying \$15 million in new capital projects, prioritized by cost-effectiveness and need.
Strategies and Solutions	<ul style="list-style-type: none"> • Continue to implement the plan to increase stormwater utility fees by approximately 8.7% per year to achieve the recommended level of service by approximately 2028. • Use the revenues from the stormwater fees to increase maintenance activities from the current level to the recommended level by approximately 2028 and to construct capital improvement projects in the amounts shown.

The Stormwater Management System

Stormwater originates primarily from rain or melting snow. Water that does not soak into the ground becomes run-off. Every property generates run-off and benefits from the Village infrastructure system that manages stormwater. Without proper stormwater management, rain events may result in flooding on roads and properties throughout the Village, leading to property damage and dangerous road conditions. Stormwater run-off must be channeled through a system of pipes, ditches, catch basins and storm drains before being safely discharged into local streams and rivers.

The Village owns and operates an extensive stormwater management system which consists of:

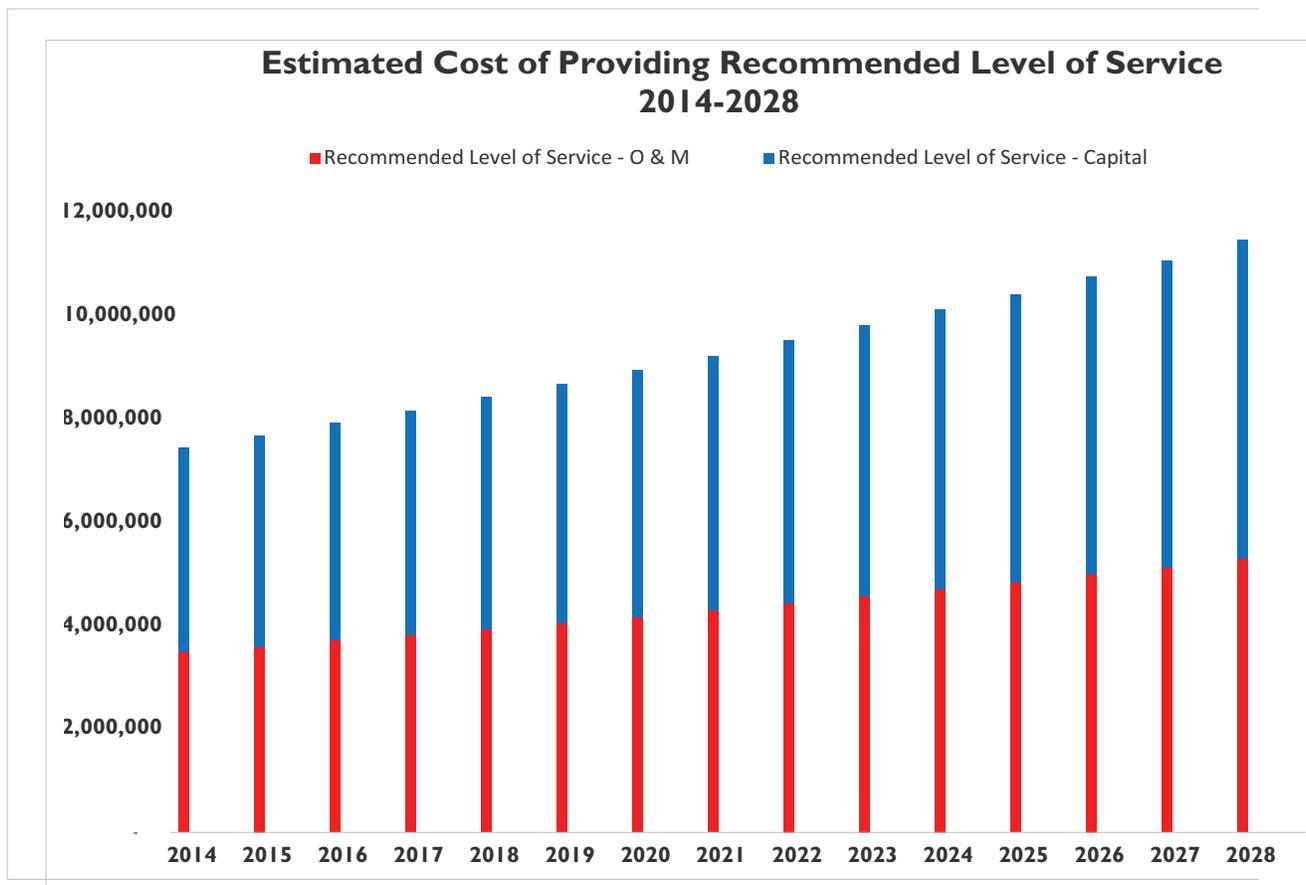
- **Approximately 7,000 drainage structures**
- **315 stormwater detention facilities (majority are privately owned)**
- **130 miles of storm sewer pipes**
- **12 miles of streams**
- **140 miles of roadway ditches**
- **47,000 feet of culverts**

Current and Recommended Level of Service

The recommended level of service is to create and maintain a stormwater management system that will safely convey and store runoff from 95% of rainfall events experienced in any given year. It is not possible to construct a stormwater management system that will handle 100% of rain events.

The stormwater management system serves the entire Village. However, the level of service provided by the system varies. In some portions of the Village the stormwater infrastructure is modern and meets the recommended service level. In other portions of the Village there is no formalized infrastructure and the service falls well short of the recommended level. To achieve the recommended service, the stormwater management system must be properly maintained in all areas and enlarged or expanded in areas that lack adequately sized infrastructure.

The estimated cost of owning, operating and maintaining a stormwater system that meets the recommended level of service was determined when the Village created the stormwater utility in 2012 and is shown in the chart below. Estimated costs consist of operation and maintenance and capital project expenses.



Maintaining the Stormwater System to Achieve the Recommended Service Level

The stormwater infrastructure system must be properly maintained to continue to function at capacity. Failure to properly maintain the infrastructure results in two types of failure which reduce capacity. A description and examples of these failures can be found on the following page.

Hydraulic Failure

Portions of the infrastructure system such as storm sewers, culverts and streams become clogged with debris, silt, vegetation or other items, partially or completely obstructing the flow of stormwater run-off.

To reduce the likelihood of hydraulic failure, the Village performs maintenance activities such as catch basin cleaning, storm sewer inspection and cleaning, street sweeping, ditch cleaning, streambank stabilization, debris and sediment removal from detention basins and repair and replacement of structures. These activities are performed based on an established schedule designed to keep the system functioning at capacity.



Structural Failure

Portions of the infrastructure system such as storm sewers and culverts crack or collapse. Structural failure is due primarily to age, type of material and construction methods. Below is an example of structural failure of a clay pipe that has collapsed.



To reduce the likelihood of structural failure, the Village replaces portions of the infrastructure that are past their useful life expectancy or that have already cracked or collapsed.

Table: Current and Recommended Level of Service for Maintenance

Maintenance Activities		Assets	Current		Recommended	
			Assets Managed Per Year	Maintenance Frequency (Years)	Assets Managed Per Year	Maintenance Frequency (Years)
Structure Maintenance	Catch Basin Cleaning	7,000	650	11	1750	4
	Structure Repair	7,000	20	350	70	100
	Structure Replacement	7,000	10	700	35	200
	Lid Replacement	7,000	20	350	70	100
Storm Sewer	Cleaning	130 miles	10	13	27	5
	TV Inspection	130 miles	7	18	27	5
Street Sweeping	Sweeping - Curb and Gutter	80 miles	720	9X per year	1,200	15X per year
	Sweeping - Curb and Gutter (CBD)	20 miles	44	22X per year	800	30X per year
	Sweeping - Curb and Gutter (Rural Section)	50 miles	0	0	150	3X per year
	Debris Removal & Disposal		0	0	1	1
Stream Maintenance	Initial Maintenance	12 miles	0	0	4	3
	Inspection	12 miles	1	12	12	1
	Routine Maintenance	12 miles	2	6	4	3
Ditch Cleaning	Regrading/Restoration	60 miles	3	20	6	10
Drainage Complaints	Investigate Various Problems	N/A	25	N/A	50	N/A
Storage Facility Maintenance	Maintain Vegetation	4 acres	11	0.4	12	0.3
	Remove Debris, Sediment	12	3	4.8	12	1
	Repair Structure	4	1	4	2	2

Improving & Expanding the Stormwater System to Achieve the Recommended Service Level

In some portions of the Village there is no formalized infrastructure or the existing infrastructure is undersized. In these areas, the service level falls well short of the recommended level. To provide the recommended level of service in these areas, the stormwater infrastructure system must be expanded, enlarged and/or extended. Capital projects such as installing storm sewers where currently none exist, or building detention basins and replacing existing small storm sewers with larger ones are required to be constructed to achieve the recommended level of service.

Allocating Funds for Maintenance Activities & Capital Projects

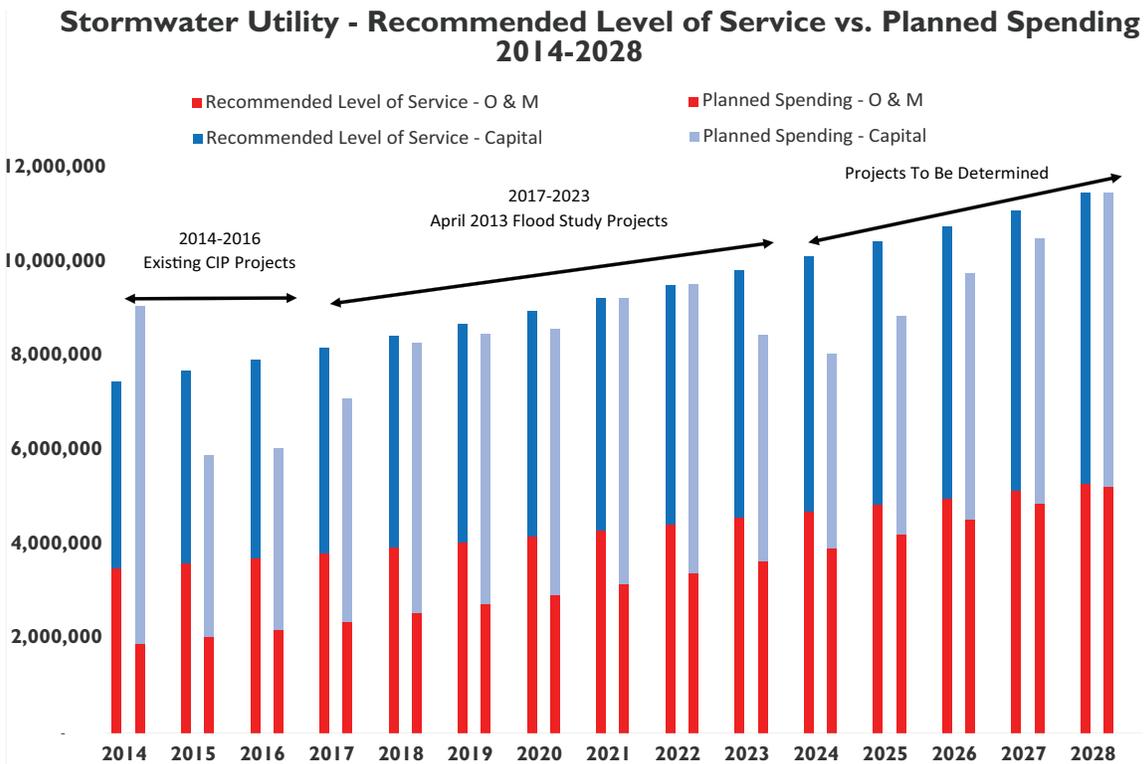
Unlike the street system, the cost of maintaining the stormwater system does not increase dramatically if maintenance activities are deferred. Generally, infrastructure replacement and maintenance activities cost the same today as it will in the future, plus inflation -- as opposed to the road system where deferring maintenance can cause the cost of repairing the road to increase by up to four times. While deferring maintenance does not dramatically increase the future cost of owning and operating the stormwater system, it does increase the likelihood of flooding.

There is no compelling reason to prioritize maintenance activities over new capital projects or vice versa. Therefore, the Village may choose to allocate funds to both maintenance activities and capital projects in an effort to move closer to the recommended service level.

Plan for Establishing and Using Stormwater Fees

In 2013, the Village launched the [stormwater utility](#). The utility model represents an equitable method to collect revenue from those properties that place a demand on the system. Revenue is generated by charging all property owners a monthly stormwater fee, based on the property's impact to the stormwater system. At that time, the Village created a plan for establishing stormwater fees that would increase revenues over a 15 year period, allowing the Village to move from the current level of service to the recommended level within that time frame. The plan calls for annual increases in the stormwater utility fee of approximately 8.7% per year, which would increase annual revenue available for stormwater management from its current level of \$3.6 million to about \$11.4 million in 2028.

Village staff prepared a plan for the allocation of the stormwater revenue for maintenance and capital project expenses (see chart below). The plan has been updated to reflect the construction of capital projects identified after the April 2013 flood.



Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Fee per ERU	\$8.94	\$9.72	\$10.56	\$11.48	\$12.48	\$13.57	\$14.75	\$16.03	\$17.43	\$18.94	\$20.59	\$22.38	\$24.33	\$26.44	\$28.74

The plan calls for the Village to invest \$4.0 million to \$6.1 million in capital projects each year. Capital projects identified in the current [Community Investment Plan](#) would be constructed from 2014 through 2016. Capital projects identified after the April 2013 flood in the 2014 [Stormwater Project Analysis](#) would be constructed from 2017 through 2023. Capital projects to be constructed from 2024 through 2028 would be identified in the future. Planned spending on capital projects exceeds the recommended level in many years up to 2023 as the Village attempts to construct projects identified after the April 2013 flood that were not considered at the time the recommended service level was prepared. Bond issuances of approximately \$10 million would be issued in 2017 and 2020 to pay for the capital projects. The debt service will be paid by revenues from the stormwater utility. Debt service expenses are included in the capital expense category.

Further, the plan calls for the Village to perform approximately 50% of the annual recommended maintenance activities in 2014 and gradually increase the maintenance activities performed each year until all recommended maintenance activities can be completed in approximately 15 years. Planned spending on maintenance activities is less than the recommended level and less than planned at the time the stormwater utility was created to provide funding for capital projects as described above.

Modifications to the Plan

The Village Council may modify the plan for establishing and using stormwater fees. The impacts of modifying the plan are summarized below:

Fees Higher than the Plan

Establishing fees greater than those shown in the plan would result in the Village performing more maintenance activities and constructing the planned capital projects sooner and moving closer to the recommended level of service sooner. If provided with adequate funding, the Village could perform maintenance activities at the recommended level immediately. Many of the capital projects have not been designed and require land acquisition. Preparing plans and acquiring land take a significant amount of time ranging from several months to over a year. If provided with the required funding, the Village could construct the capital projects currently planned to be completed by 2020, instead of 2023.

Fees Lower than the Plan

Establishing fees less than those shown in the plan would result in the Village performing less maintenance activities and constructing the planned capital projects over a longer period of time. It would take the Village longer to achieve the recommended level of service.

Changing the Allocation of Funds Between Maintenance and Capital Projects

The plan currently emphasizes the construction of capital projects as the Village attempts to improve the level of service provided in areas that do not have formalized stormwater management infrastructure or in areas that are served by undersized, inadequate infrastructure. Increasing spending on maintenance activities while decreasing spending on capital projects would likely result in improving the performance of the existing stormwater infrastructure. Decreasing spending on maintenance activities while increasing spending on capital projects would result in improving service in underserved areas while decreasing the performance of the existing stormwater infrastructure.