Village of Downers Grove
Stormwater Master Plan Update

Appendix E

Technical Memorandum

Capital Improvement Planning

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1.0 BACKGROUND AND OBJECTIVES

An essential component of a stormwater management program is the development of a Stormwater Capital Improvement Program (SCIP). The SCIP should address the Village's short- and long-term stormwater capital needs based on the Stormwater Master Plan.
The SCIP planning process:

- Provides an objective method for prioritizing stormwater projects
- Provides an understanding of capital needs
- Helps coordinate with other departments and agencies
- Helps to demonstrate regulatory compliance
- Helps to guide Village-wide planning

The planning effort to complete the SCIP is based on factors such as regulatory compliance, cost/budget, schedule, system needs and project benefits and results in a prioritized list of proposed projects. A balance of the various factors is needed to ensure a diverse project list that addresses the wide range of stormwater needs.

2.0 CURRENT STORMWATER PLANNING PROCESS

2.1 Overview

Village staff currently uses a structured approach to planning stormwater projects which effectively identifies, prioritizes and implements projects as funding allows.

Steps in the process include:

1. Identify projects
2. Rank projects according to established criteria
3. Generate prioritized list
4. Select projects based on priority for inclusion in the Village CIP

2.2 Project Identification

Stormwater improvement projects are currently identified by Village staff, residents, business owners, and others. Information about the potential projects is gathered, and brief descriptions of each are prepared.

2.3 Project Ranking

The Village has developed a *matrix* to aid in determining which capital improvement projects should be funded, with respect to budget constraints. This process includes a rankings of all Public Works projects, including stormwater projects, using two criteria categories and then a determination of level of priority.

The initial measure of the project's priority is established using the following criteria:

High
- Mandated by regulations
- High priority of Village Council
- Reduces losses in revenue or provides for increased revenues

Medium
- Maintains existing service levels
- Results in increased efficiency or improved service delivery
- Reduces operational costs
- Improves work force morale

Low
- Not mandated by regulations
- Improves service levels
- Improves quality of life

The project is then evaluated with the following project criteria:

- Protecting health, safety and welfare
- Providing for maintenance of existing systems and equipment
- Enhancing the existing systems and programs to allow for expansion of services
- Allowing for new programs and services

After each project is rated on the priority criteria (high, medium, low) and the project criteria (health/safety/welfare, maintenance/replacement, expansion of existing program, or new program), the ratings are placed on the matrix below to determine the overall prioritization level.

CRITERIA	PRIORITY		
	HIGH	MEDIUM	LOW
HEALTH/SAFETY/ WELFARE	I	I	II
MAINTENANCE/ REPLACEMENT	I	II	II
EXPANSION OF EXISTING PROGRAM	II	II	III
NEW PROGRAM	II	III	III

2.4 Project Implementation

Information about the priority projects is documented on a Capital Project Sheet, as shown below.

2007-2011 CAPITAL PROJECT SHEET Proj. #: SW-024

Project Description: Streambank Improvements- Main Branch St. Joseph Creek

Submitted By: Jonathan C. Hall Dept.: Public Works- Streets

Fund: 220 Program: 343 Project Type: ☑ New Project/Expansion ☐ Replacement ☐ Maintenance

Priority Setting Factors:	H/S/W	Maint.	Expan.	New	Low	Medium	High	OVERALL
Rating:								

BREAKDOWN OF PROJECT COST AND FUNDING SOURCES

Cost Summary	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Future Yrs	TOTAL
Professional Services							-
Land Acquisition							-
Infrastructure Improvements						850,000	850,000
Building Improvements							-
Machinery and Equipment							-
Other/Miscellaneous							-
TOTAL COST	-	-	-	-	-	850,000	850,000

Funding Source(s)	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Future Yrs	
220-Capital Improvements Fund						850,000	850,000
							-
							-
							-
TOTAL FUNDING SOURCES	-	-	-	-	-	850,000	850,000

1. Briefly Describe and provide justification for this Capital Project Request.

This project provides for the dredging and stabilization of the Main Branch of St. Joseph Creek. Preliminary project limits are estimated to begin at Carpenter and continue to Belmont Road.

2. Describe the project status and completed work.

New

3. Describe any anticipated grants related to the project.

None

4. What impact will the project have on annual operating expenses? Please quantify and describe.

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	Future Yrs	TOTAL
Projected Operating Expenses	-	-	-	-	-	-	-

Barricading and salt costs can be reduced.

Map and/or pictures of Project/Project Area:

V:\Budget Information\2007-2011 Draft CIP\Draft Stormwater Projects - FY 07-11.xls

Information shown on the form includes:

- Project name and description
- Overall prioritization
- Cost summary
- Funding sources
- Project impact
- Maps or photos

Projects are included in the annual budget and the 5-year CIP, as appropriate, and are implemented as funding is available.

3.0 PROPOSED STORMWATER PLANNING PROCESS

The current planning process can be enhanced to address stormwater projects on a more objective and rigorous basis.

Steps in the process include:

1. Identify projects.
2. Screen for meeting program objectives.
3. Score project according to established criteria
4. Develop project score distribution and identify the 90th Percentile and 50th Percentile scores. Use these scores to establish breakpoints between high, medium, and low priority projects.
5. Generate prioritized SCIP list.
6. Select projects based on priority for inclusion in the Village CIP.
7. Reevaluate score distribution on an annual basis. Ideally, projects above 90th Percentile get implemented and projects just below 90th Percentile move into the high priority range

These steps will be discussed in the following sections.

3.1 Project Identification

Project identification allows multiple stakeholders to present improvements for consideration. Potential projects can be identified through a variety of sources.

- Public requests – Residents, business owners, and other stakeholders can identify problems and work with staff to develop appropriate projects to mitigate the problem(s). An example is a roadway ditch which does not drain.
- Master planning – As hydrologic and hydraulic modeling is performed for subbasins throughout the Village, existing system deficiencies will be identified and recommendation for improvements will be made. For example, the analysis may show that a section of storm sewer is undersized, causing flooding upstream.
- Inspections – Problem areas are noted as Village staff perform field activities, and concepts for potential improvements can be developed. These inspections may be part of proactive maintenance activities, sewer televising, staff observations, emergency responses, or resident requests. An example is the frequent flooding of an intersection due to a collapsed storm sewer.
- Redevelopment – As neighborhoods continue to redevelop, new and larger storm sewers may be necessary to convey stormwater. Furthermore, new detention ponds may be desired to limit peak flows to receiving trunk storm sewers. This work can be funded through a revised building permit fee structure (as described in the *Rules & Technical Standards* section).
- Regulatory – Meeting the requirements of NPDES and other stormwater-related regulations may require implementation of projects for compliance. For example, TMDL limits established for the East Branch DuPage River may require future sampling

activities at key stormwater outfalls. Ultimately, this could lead to regional BMPs that will need to be included in the SCIP.

- The SCIP includes a planning element as well as a construction element. The planning element is designed to develop program improvements and to address regulatory activities. Activities could include:
- Hydrologic and hydraulic analysis of subbasins to determine existing system operation and recommended improvements
- Development of a comprehensive maintenance program
- Investigation of funding sources
- Development of a riparian area restoration program
- Regulatory activities

The construction element includes capital construction of projects such as:

- Drainage improvement projects
- General flood control projects
- Stream maintenance
- Stormwater operation and maintenance
- Wetland operation and maintenance
- Structural repairs and upgrades
- Stream and riparian restoration
- Water quality improvement projects

3.2 Project Prioritization

Project ranking is an important component of the SCIP process. After information about identified projects is compiled by Village staff, each project should be reviewed utilizing a consistent set of criteria in relation to other projects to determine their relative importance. The following criteria are recommended to develop a prioritized list for funding:

- Flood frequency – How often does flooding occur?
- Frequent - Several times per year
- Occasional - Once every two to five years
- Infrequent - Once every five years or less

- Flooding impact – What is the impact of the flooding on structures, infrastructure and residents?
- Minor – yard and nuisance roadway flooding
- Moderate- extended road and yard flooding
- Major – large area impacted with significant property damage and/or injury

- Condition – What is the condition of the system component?
- Poor/failing – needs immediate repair or frequent maintenance
- Fair condition – minor defects noted, occasional maintenance necessary
- Good condition – no defects noted or reactive maintenance required

- Water quality improvement – How does the project impact water quality?
- Neutral – no impact or marginal decrease in water quality
- Minimal – marginal (coincidental) water quality benefits
- Significant – significant measurable improvement in water quality

- Multi-use benefits – Does the project provide other benefits, such as recreation, education, open space, riparian habitat?
- Low – no known benefits
- Medium – one multi-use benefit
- High – more than one multi-use benefit

- Maintenance – What impact does the project have on existing maintenance levels?
- Lower – same or less than existing maintenance needed
- Same – no change in maintenance needed
- Higher – greater than existing maintenance needed

- Partnering – Are there opportunities to coordinate with other project implementation?
- High – cost savings, faster implementation with other project implementation
- Medium – may be opportunity to coordinate with other project implementation
- Low – little to no potential to integrate project with others

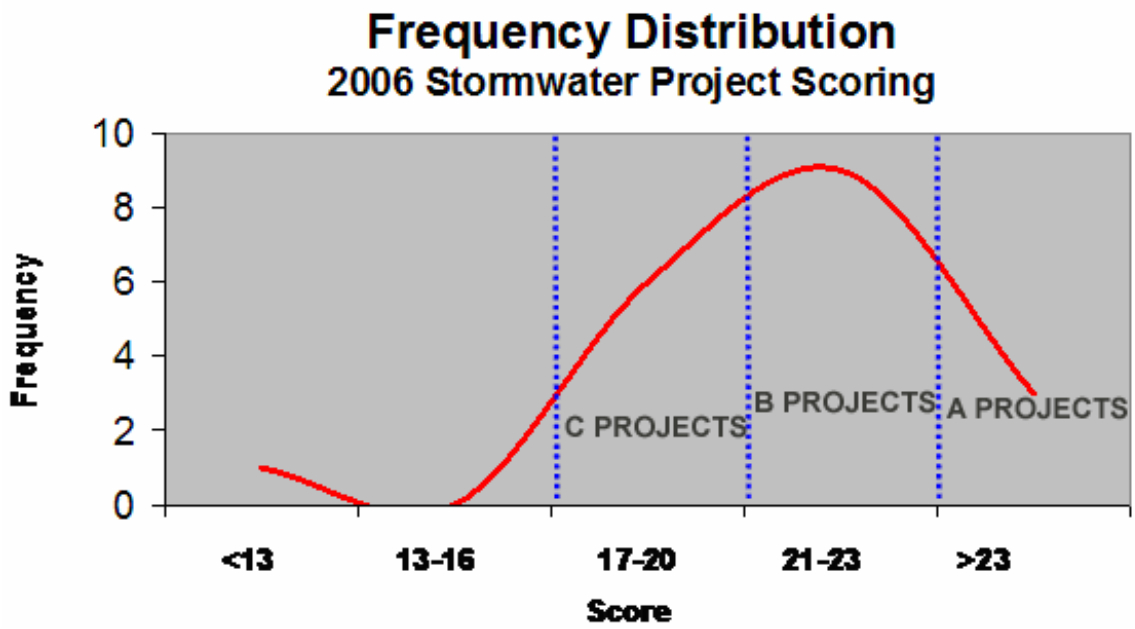
- Safety – Does the project improve safety?
- High – significant positive impact on safety
- Medium – positive impact on safety
- Low – no impact on safety improvement

These criteria and assigned numerical ratings are summarized in the following table.

PROJECT VALUE	***RATING***		
FLOOD FREQUENCY	FREQUENT 6	OCCASIONAL 4	INFREQUENT 2
FLOODING IMPACT	MAJOR 6	MODERATE 4	MINOR 2
CONDITION	POOR 3	FAIR 2	GOOD 1
WATER QUALITY	SIGNIFICANT 4	MINIMAL 2	NONE 1
MULTI-USE BENEFITS	HIGH 3	MEDIUM 2	LOW 1
PARTNERING OPPORTUNITY	HIGH 3	MEDIUM 2	LOW 1
IMPACT ON MAINTENANCE	LOWER 4	SAME 2	HIGHER 1
SAFETY	HIGH 6	MEDIUM 3	LOW 1

For each eligible project, the appropriate ratings from the table are summed to obtain a total rating, with a maximum possible of 35 points. The projects with ratings that are in the top 10% of all project ratings (above the 90th percentile of the project distribution) are classified as "A" projects. "B" projects consist of those projects between the 50th and 90th percentile. "C" projects are those below the 50th percentile. This results in a prioritized list of projects for the SCIP.

This method was used to develop a frequency distribution for 18 stormwater projects for which Capital Project Sheets were provided. The results are shown in the following graph.



Project ID	Score	Ranking
SW-001	26	A projects Top 10%
SW-016	24	
SW-010	24	
SW-022	23	B projects
SW-006	23	
SW-011	23	
SW-012	23	
SW-023	22	
SW-021	22	
SW-005	21	
SW-007	21	
SW-008	21	
SW-024	19	C projects
SW-014	18	
SW-015	18	
SW-002	18	
SW-017	17	
SW-013	17	
SW-003	12	

Currently, stormwater projects do not have a dedicated funding source and must compete with all other capital projects for inclusion in the Village CIP. The "A" projects should be categorized using the Village' matrix shown on page 4 and then included in the Village's prioritized list of capital projects.

Assuming that a portion of the "A" projects can be implemented each year, it is anticipated that some "B" projects will move up the scoring distribution by virtue of higher-priority projects being addressed and removed from the distribution. This allows medium-priority projects to "move up" on the list and receive greater attention in subsequent years.

Identifying new funding sources for stormwater projects will help the Village address a greater percentage of stormwater-related problems. Funding is discuss in more detail in the *Funding Options* section.

3.3 Implementation

Information about the priority projects can be documented on the Capital Project Sheet currently used by the Village. The form summarizes project information in a concise and easy-to-read format.

Projects are included in annual budget and the 5-year CIP, as appropriate, and are implemented as funding is available.

The proposed methodology provides an objective method of prioritizing stormwater projects. As projects are scheduled for implementation, other issues should be considered, including, but not limited to the following:

- Impacts of a project on other proposed projects should be considered. For example, an outlet improvement project may impact a proposed streambank stabilization project.
- Because some projects may overlap, project limits should be clearly defined.
- Sequencing of projects should be considered to minimize adverse impacts. For example, eliminating an upstream restriction should be scheduled after constructing downstream conveyance improvements.
- Project implementation should be coordinated with other Village projects to minimize impacts on residents and to reduce costs. For example, a storm sewer project should be scheduled in conjunction with roadway or other underground utility improvements.

4.0 STORMWATER AND FLOOD PLAIN OVERSIGHT COMMITTEE INPUT

The Stormwater and Flood Plain Oversight Committee play's an important role in the SCIP planning process. The Committee should:

- Verify that projects meet the goals of the Stormwater Master Plan and other strategic Village plans
- Identify issues that may complicate implementation of various projects
- Focus on continuous improvement of the SCIP planning process.
- Review project ranking criteria and prioritization.
- Help to identify new capital improvement projects
- Advise of the most critical projects to meet the Village's needs
- Evaluate and recommend projects for funding in the SCIP
- Continue to educate the Village Council on the importance of stormwater infrastructure planning and funding

5.0 SUMMARY

The Stormwater Capital Improvement Plan (SCIP) planning process will result in a comprehensive list of stormwater system needs and recommendations, and a prioritized ranking of proposed projects. The SCIP will be a dynamic document that will continue to evolve as projects are constructed, new projects are identified, and priorities are readjusted.