1st Reading 11/12/2024
2nd Reading 11/12/2024

BILL NO. 24-52 ORDINANCE NO. 5500

AN ORDINANCE ADOPTING A STORMWATER MANAGEMENT POLICY OF THE CITY OF CRESTWOOD, MISSOURI TO ESTABLISH A FRAMEWORK FOR MANAGING STORMWATER IN THE CITY OF CRESTWOOD; AND ENACTING A NEW SECTION 22-1 OF THE MUNICIPAL CODE RELATING TO THE STORMWATER MANAGEMENT POLICY

WHEREAS, the City of Crestwood's (the "City") Director of Public Works recommends the adoption of a stormwater management policy to provide a comprehensive approach to stormwater management within the City, including the identification, prioritization, and execution of stormwater improvement projects; and

WHEREAS, a new Section 22-1 of the Municipal Code of the City is necessary in order to codify the City's stormwater management policy; and

WHEREAS, the Board of Aldermen finds that it would be in the best interests of the City to adopt a stormwater management policy and enact a new code section regarding the policy.

NOW, THEREFORE, BE IT ORDAINED BY THE BOARD OF ALDERMEN OF THE CITY OF CRESTWOOD, MISSOURI, AS FOLLOWS:

SECTION 1: The stormwater management policy is hereby adopted, as attached hereto as Exhibit A.

SECTION 2: Chapter 22 of the Municipal Code of the City of Crestwood, Missouri, is hereby amended to enact a new Section 22-1 to read as follows:

Chapter 22 – Stormwater Management

Section 22-1 Stormwater Management Policy.

There is hereby adopted a Stormwater Management Policy of the City of Crestwood, to be maintained in the office of the Director of Public Works, to govern the management of stormwater throughout the City.

SECTION 3: This Ordinance shall be in full force and effect from and after its passage by the Board of Aldermen and its approval by the Mayor.

PASSED AND SIGNED this 12th day of November, 2024.

Mayor

ATTEST:

City Clerk

APPROVED this 12th day of November, 2024.

Mayor

EXHIBIT A

[stormwater management policy]

City of Crestwood
Stormwater Management Policy

October 22, 2024

Section 1: Introduction

The City of Crestwood (City) has updated its citywide Stormwater Management Plan. This will serve as one of the tools that the City Staff, the Public Works Board, and the Board of Aldermen use as a guide for planning future stormwater projects and determining the direction of the Stormwater Program. This plan will help ensure that City funds are used effectively and wisely in delivering stormwater management benefits to residents across the City.

The City's first plan was developed in 2002, when Crestwood retained Camp Dresser & McKee (CDM) to develop a Stormwater Improvement Study (SWIP). The purpose of the SWIP was to identify existing stormwater-related problems and develop a prioritized list of recommended improvement projects. This comprehensive study focused on four major watersheds within the city limits, including the Upper Gravois Creek, Kirkwood Creek, Mulberry Creek, and Sappington Creek.

From 2002 to 2008, the City of Crestwood made initial progress in addressing the identified stormwater issues. Several high-priority projects were completed. During this time, the city annually updated a 5-year projection of stormwater management projects, ensuring that engineering and design efforts were followed by construction and completion in subsequent years.

However, in approximately 2008, funding for stormwater management was minimized, essentially halting further progress on the planned projects. Despite this setback, the city maintained its commitment to addressing stormwater issues and kept the 2008 list of unfinished projects as a reference for future planning.

In 2024, with a renewed funding source, the City of Crestwood is once again poised to tackle stormwater management proactively. This updated policy outlines the approach for managing stormwater, including the identification, prioritization, and execution of improvement projects.

It builds on the foundation laid by the 2002 study and incorporates the lessons learned and progress made up to 2008. The aim is to reestablish a systematic and effective stormwater management plan that will safeguard the community against stormwater-related issues.

Section 2: Purpose

The primary purpose of this policy is to establish a clear framework for managing stormwater in the City of Crestwood. This policy aims to provide a comprehensive approach to stormwater management, including the identification, prioritization, and execution of improvement projects.

It outlines the criteria for project eligibility, the methodology for prioritizing projects, funding sources, and the process for updating the project list annually.

In 2024, Crestwood is initiating a renewed effort in stormwater management, divided into two distinct phases:

Phase 1: Policy Update and Enactment

Phase 1 focuses on updating, improving, and enacting a current and modern stormwater policy (this document). This policy will:

- Explain the purpose and objectives of the stormwater management policy.
- Define the types of projects eligible for inclusion in the city's project list.
- Establish criteria for prioritizing projects based on factors such as severity, community benefits, and cost.
- Identify funding sources, including the various municipal grants from the St. Louis Metropolitan Sewer District (MSD) and the anticipated funding from MSD's 2024 Proposition S.
- Outline the process for updating the project list, including how often it will be reviewed and revised.

The 2008 list of unfinished projects will serve as the starting point for the new and updated list for 2024. This phase ensures that the policy framework is aligned with current needs and funding opportunities, setting a solid foundation for effective stormwater management.

Phase 2: Engineering Review and Project Planning

Phase 2 involves contracting with an engineering firm to:

- Review the updated list of stormwater projects.
- Conduct site visits to assess current conditions.
- Update cost estimates and the proposed scope of each project to reflect present-day requirements and pricing.

Following the completion of Phase 2, the city will produce an annual 5-year plan, detailing which projects are to be funded and when.

Section 3: Definitions

The following terms and abbreviations are relevant for stormwater practices:

2-year design storm: A rainfall event with a probability of occurrence of 50 percent in any given year.

15-year design storm: A rainfall event with a probability of occurrence of 7 percent in any given year.

100-year design storm: A rainfall event with a probability of occurrence of 1 percent in any given year.

AC (Acre): A unit of measurement for labeling area.

AC-FT (Acre-foot): A unit of measurement for labeling volume.

Berm: A shelf that breaks the continuity of a slope; a linear embankment or dike.

Bioengineering: See biostabilization.

Biogabion: A flexible woven-wire basket composed of two to six rectangular cells filled with small stones and soil, as well as seeds of local plants and treatments to spur seed germination, and may be used in revetments, retaining walls, channel liners, and drop structures.

Biostabilization: A scientific and ancient method of restoring the landscape of ecosystems using the physical properties of plants, such as their sheer resistance, tensile strength, and flexibility, to rebuild the terrestrial or aquatic foundation in a manner that is both physically and ecologically stable. (see stream bank stabilization, synonymous with bioengineering)

BMP (Best Management Practice): A structural or non-structural device designed to temporarily store or treat urban stormwater runoff in order to mitigate flooding, reduce pollution and provide other amenities.

CFS (Cubic Feet per Second): A unit of measurement for labeling flow of water.

CMP (Corrugated Metal Pipe): A type of piping used in stormwater management.

Coir log: A bank stabilization technique based on a long bundle of coir (coconut fiber) bound together with coir or synthetic netting, promoting sedimentation, providing an ecologically sound medium for plant growth, and typically degrading after the establishment of a stable, non-erosive plant foundation.

Conveyance system: Natural channels and manmade structures that convey stormwater downstream.

CY (Cubic Yard): A unit of measurement for labeling volume.

Detention basin: A stormwater facility that collects and temporarily stores runoff to reduce peak flow rates and alleviate downstream flooding and erosion problems.

Flood bench: A technique used in stormwater control, when horizontal space is available, that removes earth from one or both stream banks such that the result is a visible bench when the stream is viewed in cross-section, and done to reduce water velocity, shear stresses, and water surface elevation.

Fluvial geomorphology: A class of geomorphology where the underlying structure focus is on streams, creeks, or rivers.

Gabion: A flexible woven-wire basket composed of two to six rectangular cells filled with small stones. Gabions may be assembled into many types of structures such as revetments, retaining walls, channel liners, and drop structures.

Gabion mattress: A thin gabion, usually six or nine inches thick, used to line channels for erosion control.

Geocell: A bank stabilization technique used to stabilize and revegetate over-steep vertical banks, where slopes are 1.5 horizontal: 1 vertical, and geo-synthetic cells are stacked in layers exposing the face geocell, like the run and rise of a staircase, containing a graded mixture of rock, soil, and either native seed or live root cuttings along the run of each step.

Geogrid: A bank stabilization technique used to stabilize and revegetate gently sloped banks, where slopes are 2 horizontal: 1 vertical, and composed of a vegetated synthetic biaxial geogrid material (which wraps each layer), placed upon another layer in lifts, and varied in regards to the material's openings or density depending on the earth fill being wrapped.

Geomorphology: The study of the nature and origin of landforms and their underlying structures, regarding the history of geologic changes recorded by these structures. (see also fluvial geomorphology)

GIS (Geographical Information System): A system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data.

GPS (Global Positioning System): A satellite-based system used for determining precise location.

Grouted riprap: An assemblage of broken stones bonded together with mortar and built along streams or beaches for erosion protection.

EA (Each): A unit of measurement for quantifying a unique part.

FEMA (Federal Emergency Management Agency): A federal agency responsible for coordinating the federal government's response to natural and manmade disasters.

FF (Face-Foot): A unit of measurement for labeling items that have an exposed vertical or elevation face in terms of the horizontal length.

FIS (Flood Insurance Study): A study used to determine the flood risk and insurance requirements for properties.

Floodplain: The area of land that is inundated with water during a given storm event.

FPS (Feet per Second): A unit of measurement for labeling the velocity of water.

Freeboard: The distance between the maximum water surface elevation anticipated in design and the top of retaining banks or structures, provided to prevent overtopping due to unforeseen conditions.

FSF (Face Square-Foot): A unit of measurement for labeling items that have an exposed vertical or elevation face in terms of area.

Gully: A channel or miniature valley cut by concentrated runoff through which water commonly flows only during and immediately after heavy rains and is sufficiently deep that it would not be obliterated by normal tillage operations.

Hydrology analysis: The study of the occurrence, distribution, movement, and properties of waters of the earth and their environmental relations.

Hydraulic analysis: The study of stormwater flow through the conveyance system that includes underground pipelines, culverts, improved open channels, and natural creeks.

Hyetograph: A plot of rainfall depth or intensity versus time.

Illicit connections: Illegal and/or unauthorized connections that result in untreated wastewater discharges into storm drainage systems and receiving waters.

Illicit discharge: Any discharge to a municipal separate storm sewer system that is not composed entirely of stormwater, except for discharges allowed under an NPDES permit or waters used for certain emergency situations.

Impervious: The characteristic of a material that prevents the infiltration or passage of liquid through it. This may apply to roads, streets, parking lots, rooftops, and sidewalks.

LF (Linear-Foot): A unit of measurement for labeling length.

Manning's formula: A formula used to predict the velocity of water flow in an open channel or pipeline: V = 1.486/n* R2/3 *S1/2, where V is the mean velocity of flow in feet per second; R is the hydraulic radius; S is the slope of the channel, in feet per foot; and n is the roughness coefficient of the channel lining.

MSD (Metropolitan St. Louis Sewer District): The regional sewer district responsible for managing wastewater and stormwater in the St. Louis metropolitan area.

Municipal stormwater permit: An NPDES permit issued to municipalities to regulate discharges from municipal separate storm sewers for compliance with EPA-established water quality standards and/or to specify specific stormwater control strategies.

NPDES (National Pollutant Discharge Elimination System): A federally mandated system established by Section 402 of the Clean Water Act for regulating point source and stormwater discharges.

Normal depth: The depth of flow in an open conduit during uniform flow for the given conditions. (see Manning's equation)

Open channels: Also known as swales, grass channels, streams, and biofilters. These systems are used for the conveyance, retention, infiltration, and filtration of stormwater runoff.

Outfall: The point where water flows from a conduit, stream, or drain.

Perennial stream: A stream channel that has running water throughout the year.

Pollution prevention plan: A requirement for some land uses or activities (e.g., industrial sites) that outlines techniques to prevent pollutants from being washed off in stormwater runoff (e.g., spill response, material handling, employee training, etc.)

Rational Method: A simple and widely accepted method of estimating peak runoff flow rates from urban watersheds smaller than 600 acres.

RCB (Reinforced Concrete Box): A type of stormwater management structure.

RCP (Reinforced Concrete Pipe): A type of piping used in stormwater management.

RECP (Rolled Erosion Control Product): A coir or synthetic blanket or carpet that may be used with sod or seed to prevent stormwater erosion.

RPM (Root-Prune Method): A technique used in bank stabilization for initiating woody plant growth along banks by placing living, woody plant cuttings, like willows.

Rill: Defined as of lesser depth than a gully and would be smoothed by ordinary farm tillage. (see gully)

Riparian: Characteristic of an area bordering a stream or river.

Riprap: A loose assemblage of broken stones built along streams or beaches for erosion protection.

Runoff: The portion of precipitation that is discharged from a drainage area.

Sedimentation: Soil particles suspended in stormwater that can settle in stream beds and disrupt the natural flow of the stream.

Side slopes: The slope of the sides of a channel, dam, or embankment, where customary naming is the horizontal distance first, as 1.5 to 1, or frequently, 1 ½: 1, meaning a horizontal distance of 1.5 feet to 1 foot vertical.

SF (Square-Foot): A unit of measurement for labeling area.

Slope: Defined by the change in vertical elevation divided by horizontal distance and typically expressed as a percentage.

Stream bank stabilization: The use of the structural properties of live plants to rebuild washed-out stream banks and flood terraces, including live slope fascines, hedge brush layers, and live willow brush mattresses.

Stabilization: Providing adequate measures, vegetative and/or structural, that will prevent erosion from occurring.

Subarea: A portion of a watershed that drains and concentrates at a point, typically at a catch basin, within a system of drainage pipes, or along a stream.

Surcharge: A condition of a stormwater system where the water surface exceeds the freeboard and overflows.

Swale: An open drainage channel or depression explicitly designed to detain and promote the filtration of stormwater runoff.

Tail water: Water, in a river or channel, immediately downstream from a structure.

Time of concentration: Time required for water to flow from the most remote point of a watershed, in a hydraulic sense, to a point of concentration described within a subarea.

Toe (of slope): Where the slope stops or levels out; the bottom of the slope.

TR-55: Technical Release 55, a report compiled by the Natural Resources Conservation Service that presents procedures for stormwater calculations.

TRM (Turf Reinforced Matrix): An erosion control solution that strengthens soil to resist lateral stresses.

Watershed: A region of land that drains to a river, creek, or body of water.

Wing wall: Side wall extensions of a structure, typically at the head or tail end of a system of stormwater pipes or a culvert, used to prevent sloughing of banks or channels and to direct runoff.

WTRM (Wire Turf Reinforced Matrix): An erosion control solution that strengthens soil to resist lateral stresses.

Section 4: Description of Watersheds

4.1 Watershed Description

The City of Crestwood is located entirely within the 14,558-acre (22.7 square mile) Gravois Creek watershed, in south St. Louis County, Missouri.

The Gravois Creek watershed is coupled to a network of six major tributaries, including St. George Creek, Mehlville Creek, Union Creek, Sappington Creek, Mulberry Creek, and Kirkwood Creek.

Unimproved open channel systems provide the lowland areas with 112,464 feet (21.3 miles) of drainage; a total length of 129,888 feet (24.6 miles) of known closed conduit drainage systems greater than 36 inches in diameter dewater much of the upland areas. Nineteen detention basins control flows within the Gravois Creek basin.

The City of Crestwood occupies 16 percent of the Gravois Creek watershed or 2,292 acres (3.6 square miles).

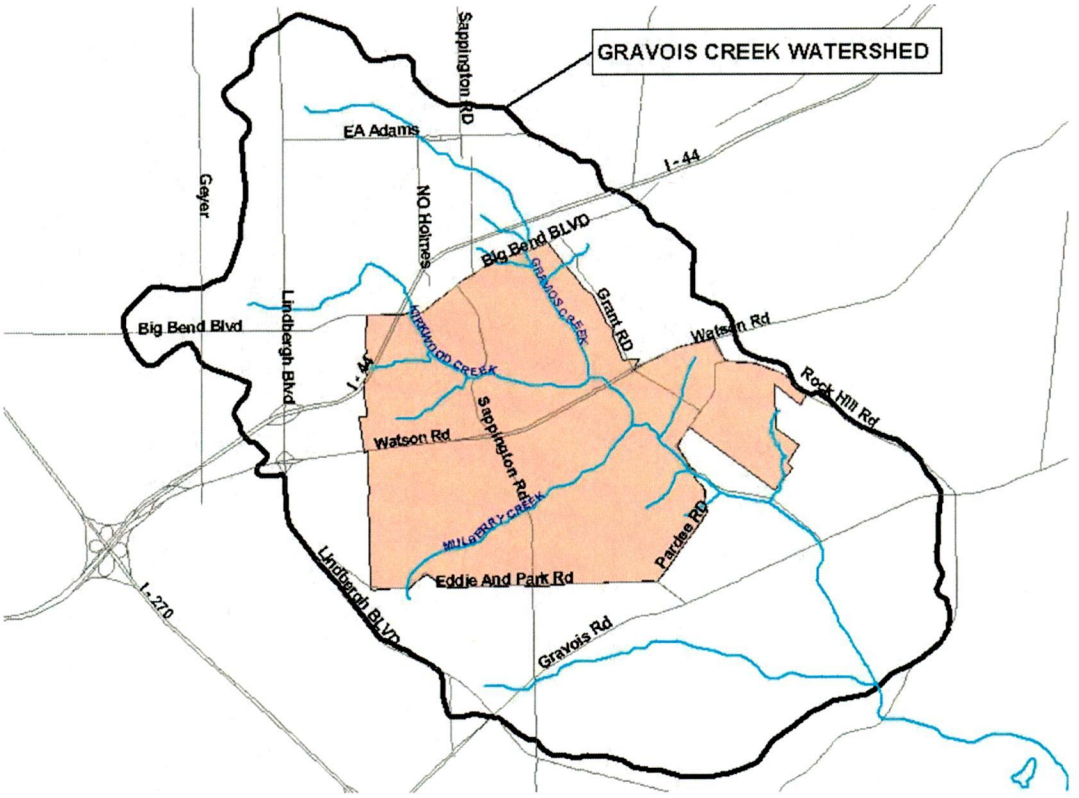


Figure 4-1

Table 4-2

Land Use Characteristics

	Drainage Area (acres)	Percent of Total Watershed Area
Gravois Creek		
Residential	716	87.7
Commercial	63	7.7
Industrial	37	4.5
Mulberry Creek		
Residential	804	86.8
Commercial	106	11.4
Industrial	4	0.4
Kirkwood Creek		
Residential	381	71.7
Commercial	73	13.7
Industrial	77	14.5
Sappington Creek		
Residential	31	100.0
Commercial	0	0.0
Industrial	0	0.0

4.2 Subwatershed Description

The City of Crestwood lies within portions of four subwatersheds of the Gravois Creek watershed, including the upper main branch of the Gravois Creek, Mulberry Creek, Kirkwood Creek, and Sappington Creek, as shown in Figure 4-1. A general overview of the four subwatersheds is presented above. Table 4-2 displays the land use characteristics for each subwatershed, which illustrate that the dominant land use category is residential.

4.2.1 Gravois Creek - Upper Main Branch

The headwaters of the upper main branch of the Gravois Creek watershed are located near the City of Kirkwood, Missouri, at an elevation of 634 feet above mean sea level. A southwesterly flow characterizes the predominant drainage pattern of Gravois Creek. The upper main branch of the Gravois Creek watershed has a total drainage area of 2,885 acres (4.5 square miles) and a main channel length of 21,648 feet (4.1 miles).

Within the City of Crestwood, the upper main branch of the Gravois Creek watershed occupies 816 acres (1.3 square miles) or 36 percent of the city. This watershed contains 10,240 feet (1.9 miles) of main channel and 8,529 feet (1.6 miles) of tributary open channel within the city limits. A tributary channel is defined as the drainage stream that empties into the main channel.

4.2.2 Kirkwood Creek

The headwaters of the Kirkwood Creek watershed are located 900 feet east of Lindbergh Boulevard in Kirkwood at an elevation of 610 feet above sea level. A southeasterly flow characterizes the predominant drainage pattern of Kirkwood Creek. The Kirkwood Creek watershed has a total drainage area of 1,885 acres (2.9 square miles) and a main channel length of 12,144 feet (2.3 miles).

Within the City of Crestwood, the Kirkwood Creek watershed occupies 530 acres (0.8 square miles) or 23 percent of the city. This watershed contains 6,420 feet (1.2 miles) of main open channel and 3,985 feet (0.75 miles) of tributary open channel within the city limits.

4.2.3 Mulberry Creek

The headwaters of the Mulberry Creek watershed are near Eddie and Park Road at an elevation of 620 feet above sea level. A northeasterly flow characterizes the predominant drainage pattern of Mulberry Creek. The Mulberry Creek watershed has a total drainage area of 1,241 acres (1.9 square miles) and a main channel length of 8,976 feet (1.7 miles).

Within the City of Crestwood, the Mulberry Creek watershed occupies 914 acres (1.4 square miles) or 40 percent of the city. This channel contains 9,342 feet (1.8 miles) of main open channel and 5,686 feet (1.1 miles) of tributary open channel within the city limits.

4.2.4 Sappington Creek

The headwaters of the Sappington Creek watershed are located 4,200 feet southwest of the intersection of Baptist Church Road and Gravois Road at an elevation of 550 feet above sea level. A northeasterly flow characterizes the predominant drainage pattern of Sappington Creek. The upper main branch of the Sappington Creek watershed has a total drainage area of 1,447 acres (2.3 square miles) and a main channel length of 9,504 feet (1.8 miles).

Within the City of Crestwood, the Sappington Creek watershed occupies 31 acres (0.05 square miles) or 1 percent of the city. No open channel is present within the city limits in this watershed.

Section 5: Project Rating System

5.1 Purpose

A prioritization plan was developed to rank the recommended improvement projects identified in 2002. The process of prioritizing the projects includes identifying the type and frequency of the problem, the severity, area affected, upstream and downstream impacts, and probable cost.

5.2 Evaluation Categories

For purposes of evaluating the severity of the problem areas at each location, the following categories were developed.

Flooding - This condition applies to floodwaters on property, the entry of stormwater into structures, and streamflow overtopping streets in such a manner that it slows vehicles or forces motorist to select alternate routes.

Erosion - Erosion applies to streamflow or overland flow that is causing excessive scour of channels and overland flow paths.

Maintenance of Existing Facilities - This condition applies to existing drainage facilities, such as culverts, curb inlets, improved channels or other stormwater improvements that are in need of repair or require replacement.

Poor Drainage - This condition applies to water standing in streets and on public and private property for extended periods.

Benefits to Properties - This category is used to account for the number of properties that benefit from the project improvements.

5.3 Adjustment Factors

Frequency - This category takes into consideration the frequency the problem is occurring. For example, if flooding of a property occurs every rainy season, versus once every 5 years, the problem area will be given a higher priority.

Risk to Persons or Property - This category accounts for the degree of risk to persons or property associated with the problem area. For example, a low water crossing that historically floods every year and has the potential to threaten a person's life, would receive a high priority versus an icy sidewalk caused by isolated ponding that could result in a broken limb.

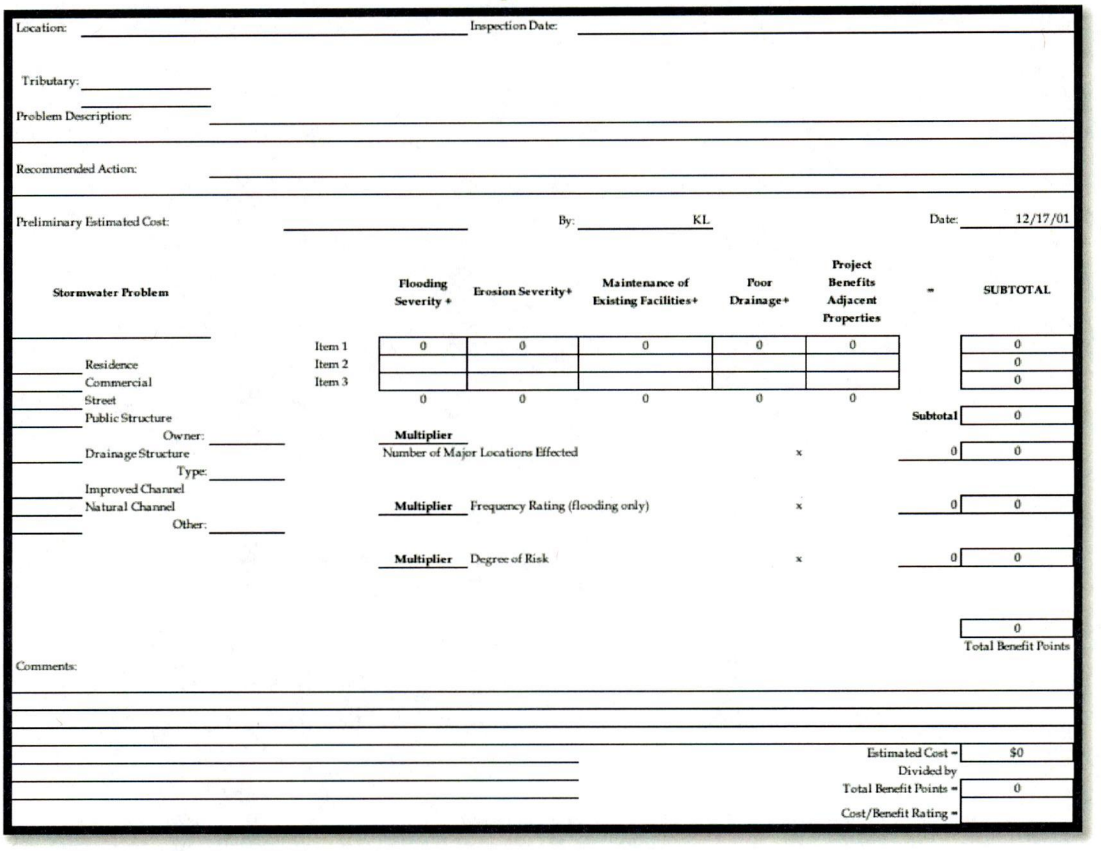
Number of Major Locations Affected - This category takes into consideration the benefits of alleviating flooding of major developments and roadways. A multiplier of 2 should be used if flooding impacts a shopping center, residential subdivision, roadway, or significant public structure.

5.4 Priority Rating Form

A priority rating form, as shown below in Figure 7-1, was developed and used to prioritize each recommended project in 2002 and will continue to be used going forward.

The first step in completing the form is to identify the applicable evaluation categories as discussed above. The next step is to assign benefits points and multipliers using the values presented in Table 7-2.

Figure 7-1



Location: _____ Inspection Date: _____

Tributary: _____

Problem Description: _____

Recommended Action: _____

Preliminary Estimated Cost: _____ By: KL Date: 12/17/01

Stormwater Problem		Flooding Severity +	Erosion Severity+	Maintenance of Existing Facilities+	Poor Drainage+	Project Benefits Adjacent Properties	=	SUBTOTAL
	Item 1	0	0	0	0	0		0
Residence	Item 2							0
Commercial	Item 3							0
Street		0	0	0	0	0		
Public Structure							Subtotal	0
Owner:		Multiplier						
Drainage Structure		Number of Major Locations Effected			x		0	0
Type:								
Improved Channel								
Natural Channel		Multiplier	Frequency Rating (flooding only)		x		0	0
Other:								
		Multiplier	Degree of Risk		x		0	0
								0
								Total Benefit Points

Comments:

Estimated Cost = $0
Divided by
Total Benefit Points = 0
Cost/Benefit Rating =

For example, for a given problem area, the user identifies the applicable evaluation categories, including Flooding, Erosion, Maintenance, and Poor Drainage. Each evaluation category can have multiple sub-categories, such as Residence Structure and Impassible Traffic under the Flooding category.

The next step is to assign benefit points relative to the severity of the problem. The severity ranges from Very High, which indicates a life-threatening situation, to Low, which is a condition that does not need immediate attention.

For the Benefits of Adjacent Properties category, the benefit points are assigned based on the number properties affected. Once the benefit points are assigned to all of the evaluation categories, the points are summed to provide an initial subtotal.

The next step is to assign applicable multipliers as discussed in the previous section. The benefit point subtotal is then multiplied by each assigned multiplier that results in the final benefit point total.

The final step is to calculate the cost/benefit rating, which is the estimated cost of the improvement, divided by the sum of the total benefit points. The lower the cost/benefit rating, the higher the priority ranking.

For example, the project with the lowest cost/benefit rating would be the highest priority project.

Table 7-2

Evaluation Category	Problem Type	Benefit Points			
		Very High	High	Medium	Low
Flooding	Residential Structure	30	20	16	12
	Commercial Structure	30	20	16	12
	Public Structure	30	20	16	12
	Impassable Traffic		16	14	12
	Passable Traffic		12	8	4
	Accessory Structure		16	12	8
	Yard		10	6	2
Erosion	Residential Structure		18	14	10
	Commercial Structure		18	14	10
	Public Structure		18	14	10
	Retaining Wall (Public)		16	12	8
	Retaining Wall (Private)		12	8	4
	Drainage Structure		16	12	8
	Street R/W		16	12	8
	Yard		16	12	6
	Improved Channel		14	10	6
	Unimproved Channel		12	8	4
Maintenance	Drainage Structure		16	12	8
	Improved Channel		14	10	6
	Unimproved Channel		12	8	4
	Street Gutter		10	6	2
	Swale/Berm		14	10	6
Poor Drainage	Street		12	8	4
	Yard		10	6	2

Benefits to Properties		Frequency Rating		Degree of Risk	
>20	50				
11-20	40				
5-10	30	>1/yr	1.0	Danger to Life	3.0
2-4	20	1/yr	0.8	Limb	2.0
One	10	1/5 yr	0.6	Structure	2.0
None (0)	0	1/10 yr	0.3	None	1.0

Section 6: Stormwater Management Plan

6.1 Project Eligibility

Projects eligible for inclusion in the city's stormwater management plan must address stormwater issues on public property or private property where a public purpose can be shown. The Public Works Director will determine project eligibility but may seek resident feedback from the Public Works Board as needed.

Eligible projects may include, but are not limited to, the following types of improvements:

- Flood control measures
- Erosion control measures
- Water quality improvements
- Infrastructure repairs or upgrades

6.2 Project Prioritization

The prioritization of projects will be based on the project rating system outlined in Section 5. Projects will be ranked according to their priority rating, with higher-rated projects receiving funding and resources first. City staff may adjust project sequencing based upon available funding or best practices.

6.3 Funding Sources

Starting in 2023, Crestwood began receiving an annual OMCI municipal grant from the St. Louis Metropolitan Sewer District (MSD). These funds can be spent each year or accumulated and spent in later years.

Starting in 2025, the OMCI grant will be replaced with a similar grant funded by MSD's 2024 Proposition S.

Award of grant funding for all projects must be approved by MSD.

The City may supplement these funding sources as needed, with approval by the Board of Aldermen.

6.4 Project List Update

The 2008 list of unfinished projects will serve as the starting point for a new and updated list for 2024. Each year, the list will be reviewed, and projects can be added, removed, or reprioritized as necessary.

6.5 Project List from 2008

The following projects were still active in 2008. Projects that have been completed or accepted by MSD are not included. The list below will be the basis for the project list to be evaluated in Phase 2 described in Section 2 of this document. The cost inflation to 2024 estimates is based on Engineering News Record's Construction Cost Index from 2002 to 2024.

See attachment Figure 6.5-1 for the potential long-range plan as of October 2024.

2008 Rank	Number	Project	2002 Estimate	2024 Estimate
1A	GC-13	Fournier Drive Box Culvert	$222,000	$476,000.00
2A	GC-6	Whitecliff Park/ Pardee Lane **(in-progress)**	$122,000	$262,000.00
1	MC-21	8856 Glen Rose Drive	$7,000	$15,000.00
2	MC-22	9875 Richter Lane	$6,000	$13,000.00
3	MC-15	8901 Manda Lane	$6,000	$13,000.00
4	MC-1	9440-9448 Lodge Pole Lane	$4,000	$9,000.00
5	GC-16	1037-1039 Coffey Court	$17,000	$37,000.00
6	MC-12	8900 Block Rusdon Lane	$13,000	$28,000.00
7	MC-7	8900 Block Lindenhurst Drive	$150,000	$322,000.00
8	MC-19	9409 Sappington Greens Lane	$26,000	$56,000.00
9	MC-14	10069-10075 Barberton Drive	$50,000	$108,000.00
10	GC-3	9107 Grant Park Drive	$42,000	$90,000.00
11	MC-6	9781-9783 Twin Vista Drive	$42,000	$90,000.00
12	MC-17	8701-8715 Gayle Avenue	$49,000	$105,000.00
13	MC-23	Eudora Court/ Arban Drive	$68,000	$146,000.00
15	MC-16	9501-9503 Crain Court	$55,000	$118,000.00
17	MC-11	Lowill Lane to Crest Oak Lane	$229,000	$491,000.00
19	KC-1	9724-9700 Greenview Drive	$78,000	$168,000.00
20	GC-4	9000-9012 Cordoba Lane	$89,000	$191,000.00
21	GC-10	1022 Diversey Drive	$155,000	$332,000.00
22	MC-10	9000 Block Maple Grove/Sky Crest	$443,000	$949,000.00
23	MC-5	9600 Block Yorkshire Estates Drive	$536,000	$1,149,000.00
24	GC-2	7600 Block Capilia Drive	$173,000	$371,000.00
25	GC-7	Blackthorn Drive to Grant Road	$756,000	$1,620,000.00
26	GC-1	9000 Block Whitehaven Drive	$221,000	$474,000.00
27	GC-8	700 Block Fieldcrest Drive	$404,000	$866,000.00
			$3,963,000	**$8,499,000**

6.6 Crestwood Projects Accepted by MSD

The following projects were originally on the 2002 list, but MSD has since accepted responsibility.

			Engineering	Construction
Type	**Number**	**Project**	**Schedule**	**Schedule**
Storm	GC-5	Pardee Road		
Storm	KC-2	1000-1012 Banyon Drive		
Storm	MC-18	8718-8722 Villa Crest Drive		
Storm	MC-13	8854-8866 Rusdon Lane	FY29	FY31

6.7 Crestwood Projects Completed Prior to 2008

The following projects were included on the original 2002 list and were completed prior to 2008.

Number	Project
GC-9	631 Fieldcrest Drive
GC-11	Royal Arms Condominiums
GC-12	72-92 Flamingo Drive
GC-14	Trailnet-Ridgewood Ditch Undercutting
GC-15	Grantwood Cove Lane
KC-3	Spellman Park
KC-4	546 and 538 Aspen Drive
MC-2	9319 Lawndale Drive
MC-3	9518-9534 Pine Spray Court
MC-4	9528 Craigwood Terrace
MC-8	Crestwood Park Entrance
MC-9	8940 Craighurst Terrace
MC-20	8811-8821 Hemingway Drive

Section 7: Implementation and Review

7.1 Engineering Review and Cost Updates

Phase 2 of the stormwater management plan will involve contracting with an engineering firm to review the project list, visit each project site, update the cost estimates and proposed scope of each project, and recalculate the project ranking score. This will ensure that the project plans are based on current conditions and accurate cost projections.

7.2 Annual 5-Year Plan

After the engineering review is completed, the city will annually produce a 5-year plan showing which projects are to be funded and when. With input and the recommendation of the Public Works Board, this plan will be reviewed and approved as part of the city's annual budget process, ensuring that stormwater management efforts are aligned with available funding and community needs.

7.3 Public Involvement and Approval

The 2008 list will serve as the starting point for projects to consider, excluding those projects that MSD has accepted responsibility for.

The Crestwood Public Works Board will serve as the resident advisory board and each year the 5-year plan shall be presented to that board for discussion and feedback and ultimate recommendation to the Board of Aldermen - which will ultimately review and approve an annual stormwater plan as part of the annual budget approval.