



**Stormwater Committee
Committee Meeting Agenda
February 16, 2022
4:45 PM
Online**

Meeting Connection Information

As a precautionary measure to help prevent exposure to and spread of COVID-19, the Stormwater Committee meeting scheduled for 4:45 p.m. on Wednesday, February 16, 2022, will be held virtually as a Zoom meeting.

Citizens are encouraged to participate and submit public comments in the following ways:

1. **Video Livestream** - Watch a live online broadcast of the Stormwater Committee meeting using the following link: <https://us02web.zoom.us/j/89233180010>.
The public will be required to provide a name and email address to enter the meeting (the email address will not be saved or used to contact you). Citizens will have the opportunity to make public comments live during the meeting using the Zoom program.
2. **Teleconference** - Call in to the meeting by dialing (312) 626-6799 and entering meeting ID 892 3318 0010 when prompted.
3. **Email** - Questions or comments that citizens wish the Stormwater Committee to consider may be emailed to the City. In order for questions and comments to be considered at this meeting, those questions or comments must be submitted no later than 5:00 p.m. on Tuesday, February 15, 2022. Submit questions and comments to Matt Wohlberg, City Engineer, at mwohlberg@crevecoeurmo.gov.

I. Call Meeting to Order

II. Roll Call

III. Approval of Agenda

IV. Approval of Minutes

1. Approval of January 12, 2022 Stormwater Committee Meeting Minutes

V. Public Comments

Two groups of residents have recently contacted staff regarding stormwater issues and may wish to address the Stormwater Committee. These groups include:

- 1) Ferntop Pipes and Channel (Melissa Inkley and Jim Hearne)
- 2) Balcon Estates Subdivision Drainage (Dan McDougell and Gay Ackerman)

VI. Unfinished Business

A. Capital Improvement Program

The Committee's packet includes a summary of the stormwater projects that are included in the draft Capital Improvement Program (CIP). There are two notable new stormwater projects in the draft CIP:

- 1) Stormwater Management Study. This study would begin in fiscal year 2023 and would end in fiscal year 2025. This project involves data collection in the forms of public input and field investigations that would be followed by the preparation of preliminary plans for ways to address the highest-priority issues. This study would begin in 2022 and is estimated to be complete some time in 2024.



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2) Stormwater Concept Plans. Preliminary plans would be drawn up for several issues and concerns that the City may be able to design and construct within the next three years. These locations include:

- Magna Carta Drive at Runnymede Drive and at Templar Drive - Storm drain modification and new storm drain(s).
- Conway Park lake - Dredge silt from park pond to restore pond depth.
- Ferntop Lane - Storm channel erosion
- Deer Creek in Malcolm Terrace Park - Creek bank erosion
- Cuisseaux Court - Subdivision drainage
- Beaver Drive - Aging culvert beneath the
- Broadview Farm - Road drainage throughout the subdivision

The preliminary designs for solutions to each of these concerns would help determine the scope, cost, feasibility, and priority of each solution. These preliminary designs would be the basis for stormwater improvement projects for the next few years, while the stormwater management study is underway.

1. Stormwater Projects in Draft FY2023-FY2027 CIP

2. 2012 Stormwater Master Plan Project List

B. Stormwater Policy

The packet includes Dick Kutta's proposed stormwater policy and Public Works staff comments about the proposed policy.

1. Draft Stormwater Policy

2. Draft Stormwater Policy with Comments from City Staff.

VII. New Business

VIII. Business from Committee Members

A. Meetings that Last more than 90 Minutes (Judy Campbell)

Mrs. Campbell would like the Committee's guidance regarding whether to set a limit on the meeting duration at 90 minutes and how to proceed past the 90-minute deadline if this limit is adopted.

B. Deer Creek Watershed Alliance - Rainscaping Cost-Share Program (Judy Campbell)

Mrs. Campbell would like to discuss the current round of the Rainscaping Cost-Share Program that is offered by the Deer Creek Watershed Alliance.

1. Deer Creek Watershed Alliance - Rainscaping Cost-Share Program

IX. Business from Staff Liaison



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A. March Meeting

The next Stormwater Committee meeting is scheduled for 4:45 p.m. on Wednesday, March 16. This meeting will be held online using Zoom.

X. Adjourn



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Meeting Connection Information

As a precautionary measure to help prevent exposure to and spread of COVID-19, the Stormwater Committee meeting scheduled for 4:45 p.m. on Wednesday, January 12, 2022, was held virtually as a Zoom meeting.

I. Call Meeting to Order

II. Roll Call

Martin Jaffe	Committee Member	(Remote)
Laura Catalano	Vice Chair	(Remote)
Judith Campbell	Chair	(Remote)
Richard Kutta	Committee Member	(Remote)
Patrick Brown	Committee Member	(Remote)
Kathleen Rizzo	Committee Member	(Remote)
Bernard Feldman	Committee Member	(Remote)
Mary Helen Gerst	Committee Member	(Absent)
Elliot Sharpe	Committee Member	(Remote)
Tim Carney	City Council Member (Ward 2) and Committee Liaison	(Remote)
Jim Heines	Public Works Director	(Remote)
Matt Wohlberg	City Engineer	(Remote)

III. Approval of Agenda

- Amend the agenda to place the Capital Improvement Program (Item D under Unfinished Business) before Stormwater Policy (Item A under Unfinished Business).**

RESULT:	ADOPTED [6 TO 1]
MOVER:	Judith Campbell, Chair
AYES:	Catalano, Campbell, Brown, Rizzo, Feldman, Sharpe
NAYS:	Kutta
ABSENT:	Jaffe, Gerst

IV. Approval of Minutes

1. Approval of December 8, 2021 Stormwater Committee Meeting Minutes

Mrs. Campbell asked to have the December minutes amended to include clarification that each member of the Stormwater Committee wrote to staff to indicate that they supported cancelling the MSD presentation that was originally scheduled to be part of the January 2022 meeting.

Minutes Acceptance: Minutes of Jan 12, 2022 4:45 PM (Approval of Minutes)



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RESULT:	ACCEPTED AS AMENDED [UNANIMOUS]
MOVER:	Bernard Feldman, Committee Member
SECONDER:	Kathleen Rizzo, Committee Member
AYES:	Jaffe, Catalano, Campbell, Kutta, Brown, Rizzo, Feldman, Sharpe
ABSENT:	Gerst

V. Public Comments

Melissa Inkley (12958 Ferntop Lane) and Jim Hearne (12970 Ferntop Lane) provided an update to the Stormwater Committee regarding MSD's repair of the storm drain behind their homes. Mrs. Inkley stated that work to repair the pipes was scheduled to begin on January 18, 2022. Mr. Hearne stated that a representative from MSD met with him to review the erosion in the channel and informed Mr. Hearne that MSD does not have any funding available to address this erosion concern.

Staff reviewed the City's policy and practice of providing gabion rock to residents in order to assist with stormwater erosion concerns. Staff suggested waiting to discuss the gabion rock until after MSD's work near the Inkley's home is complete. Staff forwarded an email to all Stormwater Committee members, Mr. and Mrs. Inkley, and Mr. Hearne that detailed this practice during the meeting.

VI. New Business

VII. Unfinished Business

A. Stormwater Policy

Discussion of this item began at the Stormwater Committee meeting on December 8, 2021. The Committee opted to continue discussion of this item at the January meeting, at which this discussion was again tabled to the February 2022 meeting.

1. Draft Stormwater Policy

RESULT:	DEFERRED [UNANIMOUS]
MOVER:	Judith Campbell, Chair
AYES:	Jaffe, Catalano, Campbell, Brown, Rizzo, Feldman, Sharpe
ABSENT:	Gerst
EXCUSED:	Kutta

B. Stormwater Management Plan Goals

Laura Catalano developed a draft list of goals for the City's stormwater management plan for the Stormwater Committee's consideration. Staff suggested that the goals could be left in draft form so that they can be updated or modified as the Stormwater Committee learns more from the stormwater management study.

1. Stormwater Management Plan - Draft Goals

Minutes Acceptance: Minutes of Jan 12, 2022 4:45 PM (Approval of Minutes)



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RESULT: ANNOUNCED

C. Stormwater Management Plan Process

Staff developed a recommended process to follow for the development of the stormwater management plan for the Committee's consideration.

1. Stormwater Management Plan - Recommended Process

RESULT: ANNOUNCED

D. Stormwater Management Study

The Committee discussed the options for the stormwater management study that were provided by staff.

1. Stormwater Management Study - Staff Recommendation

RESULT: ANNOUNCED

2. Support Option #1 for the stormwater management study, meaning that the City would focus its efforts on addressing known issues before a City-wide stormwater management study would be pursued.

RESULT: FAILED [2 TO 4]
MOVER: Martin Jaffe, Committee Member
SECONDER: Bernard Feldman, Committee Member
AYES: Jaffe, Feldman
NAYS: Catalano, Campbell, Brown, Rizzo
ABSTAIN: Sharpe
ABSENT: Gerst
EXCUSED: Kutta

3. Eliminate Option #3 (comprehensive stormwater study) and support a version of Option #2 (city-wide stormwater review with in-depth analysis of highest priority issues) for the stormwater management study.

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RESULT:	APPROVED [6 TO 0]
MOVER:	Martin Jaffe, Committee Member
SECONDER:	Kathleen Rizzo, Committee Member
AYES:	Catalano, Campbell, Brown, Rizzo, Feldman, Sharpe
ABSTAIN:	Jaffe
ABSENT:	Gerst
EXCUSED:	Kutta

E. FY2023-FY2027 Capital Improvement Program

The Committee discussed the nature of the City's stormwater projects, and the Committee generally agreed that they would like to see that the Capital Improvement Program include projects to address known issues along with the city-wide stormwater management study. The purpose of this would be to start making stormwater improvements as soon as possible.

i. CIP Schedule

1. FY2023-FY2027 CIP Schedule

RESULT:	ANNOUNCED
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ii. Parks and Stormwater Capital Improvements - Q&A

1. Stormwater Capital Expenses and Policy - Q & A

The staff memo was referenced, and the City's stormwater budget was discussed in general.

RESULT:	ANNOUNCED
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VIII. Business from Committee Members

A. Notice for Meetings and Schedule Changes (Judy Campbell)

Mrs. Campbell asked the Committee about their preferences on how to deal with meeting schedule changes. The Committee agreed that a delay of a meeting for up to an hour would be permissible and something that could be coordinated between the Committee Chair and the staff liaison. A longer delay or a different meeting day would need to be coordinated through the entire Committee in order to verify the members' availability.

IX. Business from Staff Liaison

A. Citizen Survey

City staff provided a link to the latest resident survey.

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B. Strategic Plan

Staff reminded the Committee that the City is currently working on an update to its Strategic Plan, and that this document helps to shape the City's near-term objectives.

C. 2022 Meeting Schedule

The planned 2022 meeting schedule was provided to the Committee.

1. 2022 Stormwater Committee Meeting Schedule

RESULT:	ANNOUNCED
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D. February Meeting

Mrs. Campbell stated that the next Stormwater Committee meeting was scheduled for 4:45 p.m. on Wednesday, February 16.

X. Adjourn

The meeting adjourned at about 6:40 p.m.

Minutes Acceptance: Minutes of Jan 12, 2022 4:45 PM (Approval of Minutes)

APPENDIX A
FY2023-FY2027 CAPITAL IMPROVEMENT PROGRAM

9509 STORMWATER ACCOUNT SUMMARY

CAPITAL FUND	FY2021 BUDGETED	FY2021 ACTUAL	FY2022 BUDGETED	FY2022 PROJECTED	FY2023 PROJECTED	FY2024 PROJECTED	FY2025 PROJECTED	FY2025 PROJECTED	FY2026 PROJECTED
01 Stormwater Improvements Per Master Plan	-	-	-	-	-	-	-	-	-
02 Middlebrook Drive Culvert Rehabilitation	-	287,721	-	-	-	-	-	-	-
03 Balcon Estates Culvert Improvements	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
Subtotal - Stormwater Expenses - Capital Fund	-	287,721	-	-	-	-	-	-	-

PARKS-STORMWATER TAX FUND	FY2021 BUDGETED	FY2021 ACTUAL	FY2022 BUDGETED	FY2022 PROJECTED	FY2023 PROJECTED	FY2024 PROJECTED	FY2025 PROJECTED	FY2025 PROJECTED	FY2026 PROJECTED
01 Stormwater Management Study	-	-	15,000	-	200,000	300,000	-	-	-
02 Implementation of Stormwater Management Plan	-	-	-	-	-	100,000	500,000	500,000	600,000
03 Stormwater Improvements (Deer Creek - Deer Creek OMCI)	-	-	-	-	-	-	224,000	224,000	224,000
04 Hibler Roadside Drainage	-	-	50,000	25,000	25,000	100,000	-	-	-
05 Alden Lane Drain Replacement (Deer Creek OMCI)	-	-	35,000	20,000	20,000	-	-	-	-
06 Ballas Culvert Erosion Rehabilitation (Deer Creek OMCI)	-	-	75,000	25,000	50,000	250,000	-	-	-
07 Golf Course Pond Aeration (Deer Creek OMCI)	-	-	25,000	-	25,000	-	-	-	-
08 Hibler Woods Drain Replacement	-	-	-	-	20,000	-	-	-	-
XX STORMWATER CONCEPT PLANS					150,000				
Subtotal - Stormwater Expenses - Parks-Stormwater Tax Fund	-	-	200,000	70,000	320,000	750,000	724,000	724,000	824,000

BUILDING PROJECT BOND FUND	FY2021 BUDGETED	FY2021 PROJECTED	FY2022 PROJECTED	FY2023 PROJECTED	FY2023 PROJECTED	FY2024 PROJECTED	FY2025 PROJECTED	FY2025 PROJECTED	FY2026 PROJECTED
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
Subtotal - Stormwater Expenses - Building Project Bond Fund	-	-	-	-	-	-	-	-	-

TOTAL CAPITAL EXPENSES (ALL FUNDS) STORMWATER	FY2021 BUDGETED	FY2021 ACTUAL	FY2022 BUDGETED	FY2022 PROJECTED	FY2023 PROJECTED	FY2024 PROJECTED	FY2025 PROJECTED	FY2025 PROJECTED	FY2026 PROJECTED
Total Capital Expenses - Stormwater	\$ -	\$ 287,721	\$ 200,000	\$ 70,000	\$ 320,000	\$ 750,000	\$ 724,000	\$ 724,000	\$ 824,000

Communication: Stormwater Projects in Draft FY2023-FY2027 CIP (Capital Improvement Program)

Stormwater Master Plan Projects
Sorted by Ownership then Ranked by Max Score

Project ID	Original Project ID	Project Name/Location	Problem Description	Problem (Short)	Responsibility	Preferred Solution		Alternate Solution		Benefit Points	Max Score	Min Score	Easements Required?	Comments
						Description	Estimated Cost	Description	Estimated Cost					
DC-3	2-4	Villa Coublay Drive #60	Significant creek erosion	Erosion	Frontenac	Construct vegetated gabions to stabilize banks	\$ 491,000	Regrade creek bank; provide bioretention with soil blanket and plantings	\$ 267,000	10	0.037	0.02	Yes (TCE)	This project appears to be outside of Creve Coeur.
DC-X	N/A	Ladue Road #11760	Stormwater runoff uses the circle driveway at this property to turn the corner from Ladue Road to New Ballas Road	Flooding	Private	Reconstruct driveway apron to block water runoff from street	\$ 5,000	Curb cut and construct inlet to discharge to adjacent lake	\$ 100,000	10	2	0.1		Addressed when new curbing was installed during the 2017 Ladue Road Stabilization Project
FC-2	13-1	Beauvais Court #741 & #749	Runoff from Nimes Drive floods and erodes back yards	Erosion/Flooding	Private	Construct a berm, an area inlet, and 200 LF of 12" pipe	\$ 80,000	Construct berm and swale to route stormwater to existing inlet	\$ 55,000	85	1.545	1.063		
SC-7	4-10	Clion Lane and Ladue Lake Drive	Gully erosion and ponding in multiple back yards	Erosion/Ponding	Private	Improve existing swale; regrade yard	\$ 58,000	Construct a new storm system, to include 3 area inlets, 390 LF 15" pipe, and 600 LF 18" pipe	\$ 208,000	40	0.69	0.192		
WC-1	7-1	Mosley Acres Drive #10,11,12	Overtopping of dam causes flooding at #10; erosion and damage to dam evident	Erosion; Dam	Private	Clear spillway, raise dam, and reinforce dam face with rip rap	\$ 49,000	None		30	0.612			Dam repair complete in early 2022
WC-6	31,32	Wedgewood Lane #6, #7	Home construction along Colonial Hills and Deaver has increased stormwater flow into back yards	Ponding	Private	Construct new storm system, to include 2 inlets, 170 LF 15" pipe, and 170 LF 12" pipe	\$ 96,000	Construct grass swale with turf reinforcement mat and route drainage to street	\$ 54,000	30	0.556	0.313		
CC-2	5-8	Fernview Drive #1020 and #1028	Yard erosion observed in backyards due to runoff from homes behind on Ferngate.	Erosion	Private	Construct grass swale using turf reinforcement mat	\$ 39,000	Construct new storm system, to include 180 LF of 12" pipe and 1 area inlet	\$ 52,000	20	0.513	0.385		
WC-4	24	Mystic Meadows Lane #121	Erosion along north and south sides of property	Erosion	Private	Construct drainage system to connect to existing, to include 2 inlets and 500 LF 15" pipe	\$ 136,000	Construct/formalize grass swales along property lines	\$ 74,000	35	0.473	0.257		
MS-7	21	Larkin Avenue #859	Yard ponding and erosion following enclosure of driveway culvert and original swale	Erosion; ponding	Private	Reconstruct grass swale with reinforcement mat; replace driveway culvert	\$ 43,000	Replace swale with enclosed system to include curb and gutter, 3 inlets, 400 LF 12" pipe, and 550 LF 15" pipe	\$ 350,000	20	0.465	0.057		
SC-2	5-7	Ladue Woods Drive #12229	Backyard ponding of stormwater from neighbor's back yard.	Erosion/ponding	Private	construct storm system with 1 inlet, 230 LF of 12" pipe, and 135 LF of 15" pipe	\$ 87,000	Re-establish existing grass swale to route stormwater to street.	\$ 59,000	27	0.458	0.31		
FC-3	3-10	Hibler Court #373	Existing concrete flume in back yard does not carry enough runoff	Erosion/Flooding	Private	Construct inlets and berms to control flow in flumes	\$ 51,000	Construct berms along flumes to control flow	\$ 44,000	20	0.455	0.392		
FC-6	26	Royal Valley Drive #12121, #12135	Backyard erosion	Erosion	Private	Reconstruct grass swale with reinforcement mat	\$ 47,000	Construct a new storm system to include 3 inlets and 520 LF of 12" pipe	\$ 117,000	20	0.426	0.171		
DC-7	27	Runnymede Drive #434	Minor erosion along side yard	Erosion	Private	Construct new drainage system, to include 2 inlets and 300 LF 12" pipe	\$ 74,000	Regrade back yard; construct vegetated swale to drain yard to street	\$ 49,000	20	0.408	0.27		
WC-8	18	Ladue Estates Drive #71, 73	Ponding in back yards	Ponding	Private	Regrade back yards to drain	\$ 52,000	Construct storm system and tie into existing system near street; involves 2 inlets and 300 LF 12" pipe	\$ 74,000	20	0.385	0.27		
DC-5	1-6	Ladue Estates Drive #5	Minor erosion in back yard	Erosion	Private	Turf reinforcement mat along back slope of property	\$ 28,000	Construct berm, new area inlet, 220 LF 12" pipe	\$ 66,000	10	0.357	0.152		
SC-10	3, 4 (2010)	Balcon Estates #24 & #26	Erosion along drainage channels through these yards	Erosion/Ponding	Private	Construct vegetated gabion walls for erosion; french drain for backyard ponding	\$ 123,000	None	\$ -	40	0.325			
MS-6	9	Colonial Hills Drive #77	Erosion damage in back yard from neighbor's drain pipes	Erosion	Private	Replace swale with enclosed pipe and connect to nearby inlet	\$ 169,000	Reconstruct grass swale using turf reinforced mat	\$ 74,000	20	0.27	0.118		

Stormwater Master Plan Projects
Sorted by Ownership then Ranked by Max Score

Project ID	Original Project ID	Project Name/Location	Problem Description	Problem (Short)	Responsibility	Preferred Solution		Alternate Solution		Benefit Points	Max Score	Min Score	Easements Required?	Comments
						Description	Estimated Cost	Description	Estimated Cost					
CC-3	3-2	Fernway Lane #928	Ponding in backyard due to properties to the east and grading/landscaping around existing area inlet	Ponding	Private	Clear area inlet	\$ 63,000	Replace existing inlet with double inlet; regrade yard	\$ 68,000	17	0.27	0.25		
FC-5	17	Halsgame Lane #12318	Backyard erosion near fence line.	Erosion	Private	Reconstruct grass swale with reinforcement mat	\$ 42,000	Construct a new storm system to include 1 inlet, 260 LF 18" pipe	\$ 75,000	10	0.238	0.133		
SC-9	2-1	Hibler Oaks #219	Minor erosion in back yard	Erosion	Private	Construct new drainage system, to include 1 inlet and 190 LF 15" pipe	\$ 58,000	Reconstruct grass swale using turf reinforced mat	\$ 44,000	10	0.227	0.172		
CC-5	14	Fernway Lane #12921	Runoff behind home threatens wooden retaining wall; wood currently rotten; yard ponding	Erosion/Ponding	Private	Reconstruct swale; remove private retaining wall	\$ 45,000	Construct a new storm system, to include 1 area inlet and 160 LF of pipe; remove private wall	\$ 63,000	10	0.222	0.159		
WC-5	30	Tureen Drive #11205	Minor erosion in back yard; report of sink hole	Erosion	Private	Reconstruct swale with turf reinforcement mat to drain to inlet	\$ 45,000	Create natural stream/pool environment		10	0.222			
MS-3	3-20, 12	Country View Drive #10671	Original back yard swale disturbed by development and no longer functions well, causes yard flooding	Ponding	Private	Construct grass swale to drain to street	\$ 47,000	Construct new storm system, to include 1 inlet, 1 manhole and 525 LF of 12" pipe	\$ 115,000	10	0.213	0.087		
WC-7	33	Windrush Creek East #6	Severe channel erosion in front yard between driveways	Erosion	Private	Regrade swale and install turf reinforcement mat; replace existing culverts beneath driveways	\$ 114,000	Replace existing open channel with pipes; replace existing culverts beneath driveways	\$ 100,000	10	0.1	0.088		
SC-X	N/A	Chasselle Lane #2	Ponding in yard and along driveway following storms; ponding became worse following recent MSD project	Ponding	Private	Regrade driveway and construct swale to drain ponding area toward Ladue Road	unknown							
SC-X	N/A	Balcon Estates #26	Erosion around footing to driveway bridge	Erosion	Private	Construct concrete armoring for footings	unknown							
SC-X	N/A	374 Falaise Drive	Runoff from Hibler Road causing erosion and sinkholes through back yard	Erosion; Infrastructure	Public	Construct swale along side of Hibler to creek	\$ 15,000	Add curb and berm along Hibler Road	\$ 15,000	26	1.733	1.733	Yes (TCE)	Swale installed summer 2020
SC-X	N/A	Balcon Estates Court #10	Culvert headwall failure, street partial collapse	Infrastructure	Public	Remove and replace entire culvert	\$ 150,000	Remove and replace headwall, upstream structure	\$ 85,000	85	1	0.567	Yes (TCE)	MSD fixed in 2020
DC-1	4-8	Tarrytown Drive #11732, #11700	Creek flooding and erosion near culvert beneath New Ballas Road; risk of flooding	Erosion/Flooding	Public	Clear area downstream of culvert, regrade and armor creek	\$ 250,000	None		140	0.56		Yes (PDE, TCE)	Recommended for FY2022 design and FY2023-FY2024 construction
MS-8	22	Middlebrook Lane #3,4,5,6	Bank washout upstream and downstream of culvert	Erosion	Public	Replace existing culvert and headwalls	\$ 265,000		\$ -	145	0.547		Yes (PDE, TCE)	Completed in 2020
MS-X	N/A	Chilton Lane #4	Inadequate drain and culvert collapse	Infrastructure	Public	Replace inlet and pipe; create swale on south side	\$ 70,000	Replace inlets and pipe	\$ 75,000	35	0.5	0.467	No	Hole filled in 2020; Recommended for design and construction (FY2022)
MS-10		Chilton Lane #12, 13	Erosion at culvert has contributed to pipe collapse on south side of street	Erosion; Infrastructure	Public	Replace culvert with 48" and 36" pipes and headwalls	\$ 112,865		\$ -	47	0.416		Yes (PDE, TCE)	Project completed in 2013
WC-3	23	Mosley Acres Drive #16+	Asphalt overlay of concrete street has reduced gutter capacity and has led to erosion behind curb	Erosion	Public	Remove and replace 400 LF curbing	\$ 50,000	None		20	0.4		No	Best to address this with the next major roadway work on Mosley Acres to be consistent on both sides of street
FC-1	13-4	Fernridge Creek Flooding	Erosion and flooding along Fernridge Creek from Bellerive Estates Drive to and south of Ambois Drive	Erosion/Flooding	Public	Construct vegetated gabions to prevent further erosion; increase flood capacity	\$ 5,000,000	Construct vegetated gabion walls along creek to protect banks	\$ 2,500,000	838	0.335	0.168	Yes (TCE, PDE)	100-year flood plain and floodway
SC-X	N/A	Broadview Farm #19, #20, #21, and #22	Roadway grade does not slope to inlet, causing roadside ponding.	Infrastructure	Public	Raise curb and repave road to drain	\$ 30,000			10	0.333		No	Need to determine if additional areas in the subdivision require the same work to make the road drain
CC-4	13	Ferntop Lane #12970	Creek erosion observed behind backyard; creek susceptible to flooding	Erosion/Flooding	Public	Place rip rap along channel; raise banks	\$ 71,000	Use biostabilization methods to address erosion; raise banks	\$ 61,000	20	0.328	0.282	Yes (TCE)	MSD to repair adjacent culverts in 2021-2022
SC-4	4-5	Booth Bay Lane #12318	Creek erosion at discharge of 18" pipe	Erosion	Public	Construct vegetated gabions to prevent further erosion	\$ 104,000	Provide biostabilization for banks	\$ 33,000	10	0.303	0.096	Yes (TCE)	Identified for future MSD repair

Stormwater Master Plan Projects
Sorted by Ownership then Ranked by Max Score

Project ID	Original Project ID	Project Name/Location	Problem Description	Problem (Short)	Responsibility	Preferred Solution		Alternate Solution		Benefit Points	Max Score	Min Score	Easements Required?	Comments
						Description	Estimated Cost	Description	Estimated Cost					
PC-1	5-4	Tealwood North Drive #47	Erosion at culvert headwall and outlet; bank erosion	Erosion	Public	Replace existing culvert; install heavy stone along creek	\$ 85,000			25	0.294		No	Fixed by MSD project in 2017.
SC-5	4-5	Booth Bay Lane #12310	Gully erosion in backyard; storm manhole reportedly loses its lid in storms	Erosion; Infrastructure	Public	Replace manhole with area inlet; upgrade existing pipe	\$ 68,000	Improve existing swale using turf reinforcement mat and vegetation	\$ 41,000	12	0.293	0.176	Yes (TCE)	Identified for future MSD repair
SC-1	13-9	Chasselle and Chamblee	Creek erosion; severe flooding potential	Erosion/Flooding	Public	Place heavy stone along channel to protect banks	\$ 1,500,000	Place rip rap along channel; construct berm/levy along creek	\$ 4,000,000	432	0.288	0.108	Yes (PDE, TCE)	100-year flood plain and floodway
CC-1	5-8	Fernview Drive #1009	Erosion at discharge of pipe at north section of backyard. Discharge of pipe was covered with yard waste and debris.	Erosion	Public	Construct reno mattress at end of pipe to allow for dissipation of energy at outlet	\$ 52,000	Place rip rap at end of discharge of pipe and along drainage path.	\$ 35,000	10	0.286	0.192	Yes (TCE)	
SC-3	4-4	Royal Manor #12554	Creek erosion behind home.	Erosion	Public	Clear honeysuckle; provide biostabilization for banks	\$ 45,000	Clear honeysuckle; install rip rap on banks	\$ 43,000	12	0.279	0.267	Yes (TCE)	
SC-11	N/A	Dartagnan Court #13200	Erosion at end of drainage discharge pipe	Erosion	Public	Place rip rap at end of pipe and along drainage path	\$ 42,000	Construct reno mattress at end of discharge pipe and along drainage path	\$ 36,000	10	0.278	0.238	Yes (TCE)	Access will be difficult
MS-4	1-8	Oak Park Court #3	Insufficient street grate may cause yard flooding if clogged with debris	Flooding; Infrastructure	Public	Construct new curb and gutter; replace inlet; install 90 LF 12" pipe to creek	\$ 47,000	Remove existing inlet; construct grass swale to convey runoff	\$ 36,000	10	0.278	0.213	Yes (TCE)	Renovation of property lessened the impact of this issue
SC-8	4-11	Laduemont Drive #240	Creek erosion in back yard at discharge of storm pipe	Erosion	Public	Place rip rap at end of pipe & along drainage path	\$ 40,000	Construct reno mattress at end of discharge pipe & along drainage path	\$ 41,000	10	0.25	0.244	Yes (TCE)	
MS-X	N/A	Brooktrail Court #257	Channel erosion behind home	Erosion	Public	Construct gabion baskets to armor creek bank	\$ 50,000	None		12	0.24		Yes (TCE)	Should evaluate neighboring properties to determine full scope of work.
FC-4	11	Country Manor Lane #12295	Erosion at end of drainage discharge pipe	Erosion	Public	Construct reno mattress at end of pipe to allow for dissipation of energy at outlet	\$ 49,000	Place rip rap at end of discharge of pipe and along drainage path.	\$ 42,000	10	0.238	0.204	Yes (TCE)	MSD fixed in 2020
SC-X	N/A	Hibler Roadside Drainage	Most of the existing roadside swales have lost capacity over time, and other locations have little or no drainage facilities	Infrastructure; Flooding	Public	Re-establish and improve drainage swales along about 1500 feet of Hibler Road	\$ 150,000		\$ -	32	0.213		No	Recommended for FY2022 design and FY2023 construction
WC-2	16	Graeser Lane #11076	Stormwater runoff from Graeser Lane floods front yard, missing existing channel	Flooding	Public	Construct new curbing and re-grade street to drain to trench	\$ 61,000	Install trench grate in street; drain to trench	\$ 49,000	10	0.204	0.164	Yes (TCE)	Issue partially resolved through repaving Graeser Lane in 2019
SC-6	4-10	Chamblee Lane #606, 622	Creek erosion	Erosion	Public	Construct vegetated gabions to prevent further erosion	\$ 265,000	Regrade creek bank; provide bioretention, soil blanket, plantings	\$ 143,000	24	0.168	0.091	Yes (TCE)	100-year flood plain
WC-X	N/A	Graeser Lane #11029	No drainage structures exist along Graeser Lane; groundwater and stormwater saturate and erode the pavement	Infrastructure	Public	Add inlets to Graeser Lane and connect to system at Oakhaven (to the south)	\$ 150,000	Add inlets to Graeser Lane and connect to system at west end of subdivision	\$ 200,000	25	0.167	0.125	Yes (PDE, TCE)	
MS-2	4-7	Spoele View Court #10677	Severe creek erosion behind property near culvert headwall	Erosion	Public	Construct vegetated gabion creek banks and install heavy stone along east bank	\$ 214,000	Regrade bank with soil blanket biostabilization; heavy stone along east bank	\$ 106,000	10	0.094	0.047	Yes (TCE)	100-year flood plain and floodway
DC-X	N/A	Malcolm Terrace Park Bridge	Deer Creek has eroded the banks around the foundation for a vehicular bridge to Malcolm Terrace Park	Erosion; Infrastructure	Public	Re-establish creek bank and armor bank at bridge supports	\$ 400,000		\$ -	33	0.083		No	This bridge has been closed to vehicular traffic for several years; 100-year floodplain and floodway
FC-X	N/A	Gascogne Court #13104	Bank erosion along back yards threatens the property corner	Erosion	Public	Conduct watershed analysis to better understand flow rates and project scope		Reinforce stream bank with heavy stone or walls	\$ 250,000	20	0.08		Yes (PDE, TCE)	100-year flood plain and floodway; Erosion extends along several properties; south side of creek is in Town and Country
SC-X	N/A	Conway Park Lake Dredging	The lake at Conway Park is severely silted and about 2 feet deep. One of the inlet pipes is practically blocked	Infrastructure	Public	Dredge pond.	\$ 200,000	None		10	0.05		No	

Stormwater Master Plan Projects
Sorted by Ownership then Ranked by Max Score

Project ID	Original Project ID	Project Name/Location	Problem Description	Problem (Short)	Responsibility	Preferred Solution		Alternate Solution		Benefit Points	Max Score	Min Score	Easements Required?	Comments
						Description	Estimated Cost	Description	Estimated Cost					
DC-X	N/A	Creve Coeur Golf Course/Executive Office Park Pond Rehabilitation	Ponds at the Creve Coeur Golf Course serve as detention ponds and have silted in and need edge treatments	Infrastructure	Public	Dredge ponds, replace dam, install rock lining for ponds	\$ 2,000,000	None		35	0.018		No	
PC-X	N/A	Tealwood North Drive #60, 61, 62, and 63	Runoff from Tealwood Drive travels through the front yards of these properties and along the side and behind #62	Flooding	Public/Private	Construct low-profile asphalt curb along street and modify driveway aprons to deter water	\$ 10,000	Regrade front yards to drain toward Tealwood	\$ 40,000	75	7.5	1.875	Yes (TCE)	Curb completed in 2016 prior to microsurfacing project
MS-9	25	Rondelay Drive #10835	Channel erosion upstream of inlet in back yard; asphalt overlay has reduced gutter capacity, leading to erosion behind curb	Erosion; Infrastructure	Public/Private	Improve existing swale with turf reinforcement mat	\$ 34,000	Connect new storm structures to existing system; construct 2 inlets and 200 LF 12" pipe	\$ 70,000	20	0.588	0.286	Yes (PDE, TCE)	
DC-6	20	Ladue Meadows Lane #104	Erosion and yard damage in back yard; erosion around inlet near street	Erosion	Public/Private	Construct new drainage system, to include 1 inlet and 150 LF 12" pipe	\$ 48,000	Reconstruct grass swale using turf reinforced mat	\$ 39,000	20	0.513	0.417	Yes (PDE, TCE)	
MS-5	7	Chaminade Drive #13, 14	Creek retaining walls have collapsed between subdivision and Chaminade High School; significant creek erosion	Erosion; Infrastructure	Public/Private	Replace existing retaining wall with rip rap upstream and downstream of pedestrian bridge	\$ 63,000	Remove existing retaining walls, regrade banks, and install soil blanket biostabilization	\$ 60,000	25	0.417	0.397	Yes (TCE)	Creek is on Chaminade property and is generally only accessible from the Chaminade high school side
DC-2	3-7	Fairways Circle #631, #647	Erosion and ponding in back yard along creek line, reportedly due to runoff from adjacent commercial properties	Erosion/Flooding	Public/Private	Construct a new storm system to include 2 inlets, 250 LF of 12" pipe, and 130 LF of 15" pipe	\$ 92,000	Construct storm system and tie into existing system near street; involves 2 inlets and 260 LF 12" pipe	\$ 71,000	24	0.338	0.261	Yes (PDE, TCE)	639 Fairways solved their problem with french drains in their back yard.
DC-4	2-5	Fairways Circle #527	Creek and backyard erosion	Erosion	Public/Private	Construct soil blanket and plantings for creek biostabilization	\$ 32,000	Construct berm, new area inlet, 60 LF of 12" pipe	\$ 39,000	10	0.313	0.256	Yes (TCE)	
MS-1	4-6	Spoede Acres Street #2	Stormwater runoff from surrounding area causes ponding and erosion in back yards	Erosion; ponding	Public/Private	Reconstruct swale with turf reinforcement mat to drain to inlet; construct curbing along Spoede Acres	\$ 67,000	Create natural stream/pool environment		20	0.299		Yes (TCE)	

Stormwater Policy Statement - Draft

City of Creve Coeur MO

Purpose: To guide Creve Coeur City Council and administrative staff regarding stormwater legislation, development planning and capital and operations budgets and expenditures.

1. Public safety and health should receive primary emphasis in prioritizing expenditure of stormwater budget and staff resources. Examples would include public infrastructure such as critical facilities and city-maintained roads. Stormwater projects that reduce ongoing operating costs or minimize public property losses should also receive high priority.
2. Stormwater mitigation projects should provide the greatest expected benefit for the expenditure required. This principle is expected to favor projects that involve multiple beneficiaries.
3. Stormwater problems that involve the likelihood of flooding of non-governmental structures should be mitigated by prioritizing habitable residences over industrial and commercial structures.
4. Private structures that lie within the FEMA Special Flood Hazard Area SFHA (100-year base flood) will be primarily eligible for stormwater emergency assistance. Private habitable structures classified as outside the FEMA Special Flood Hazard Area should be eligible for all appropriate resource assistance.
5. Construction permits for residential structures should be granted only where the elevation of the lowest occupied level is greater than 1 foot above the base flood elevation.
6. Flood-prone areas should be reserved for low loss uses such as parks, public use recreational areas or unoccupied non-residential uses such as parking and landscaping. Flood-prone areas should be designated in city's comprehensive plan and reserved through zoning.
7. Stormwater runoff from municipal and private pavements should be directed away from low-lying areas and mitigated through incorporation of stormwater detention and stormwater best practices.
8. Stormwater storage capacity should not be reduced by private or public development projects. Where storage capacity is reduced, equivalent offsets should be provided by developer.
9. The Stormwater Committee should review planned stormwater projects annually for consistency with the Stormwater Master Plan and make recommendations to the City Council regarding which projects should be retained, advanced or removed from the Capital Improvement Program.
10. Maintenance of creeks and drainages should be the responsibility of the property owner. If the City finds it in the public interest to use public funding to maintain or improve creeks or drainage facilities that cross private property, the City should expect the adjacent property owners to donate any easements required for the project and for future maintenance.

11. Cost Sharing. Construction cost of stormwater mitigation projects on private property shall be shared between City and property-owner with property owner paying one-third of the construction cost plus engineering costs such as boundary survey of project area, construction documents and construction easements and temporary laydown areas. City shall manage the work.

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Commented [WM1]: Combined the original #11 from below into this goal.

Commented [WM2]: Do we want the City to provide assistance to flooded homes in the flood plain? Isn't that why they have flood insurance? Is the thought here that the City will not make it a goal to protect homes within the 100-year flood plain?

Commented [WM3]: This is a requirement of Chapter 415 – Flood Hazard Control Regulations. I suggest removing this item, because it is already covered in detail in Chapter 415 and the building code.

Commented [WM4]: Much of this is already done. "Flood-prone" is somewhat subjective. The FEMA-defined floodway is the most strictly regulated zone in Creve Coeur. It is reserved for only a few uses, as defined in Chapter 415. Like #5, I suggest removing this item, because it is regulated in Chapter 415.

Areas along creeks (regardless of floodplain designation) are also protected from development by buffer zones that are defined in Chapter 430.

The comprehensive plan and zoning are the purview of the Planning and Zoning Commission.

Commented [WM5]: We cannot practically mitigate all of the runoff from our streets. Runoff must be managed in low-lying areas. The same could be said for private streets and private property.

Communication: Draft Stormwater Policy with Comments from City Staff. (Stormwater Policy)

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Commented [WM6]: Generally, this is an MSD requirement

Commented [WM7]: Prioritization by location could conflict with prioritization by benefit score (#2 above).

Commented [WM8]: This will require a new program to be approved by the City Council. The parameters of such a program should be carefully defined, and the City should consider a limit to the amount the City will participate in each year.
The City does not have the capacity to manage a program like this.
I suggest that the City consider a reimbursement program where the property owner develops a design, submits an application for the program, proceeds with the work under an approved application, manages the project through completion, pays their contractor, and then submits the documents to the City for reimbursement. This would be similar to the City's sewer lateral program.



Landscaping Rebate Opportunity for the CURRENT RESIDENT
466 FOURWYND DR
CREVE COEUR MO 63141-7718

February 4, 2022

Dear Resident:

We don't want you to miss out on this unique opportunity! **Missouri Botanical Garden's Deer Creek Watershed Alliance has launched a Rainscaping Cost-Share Program that is only available to a targeted section of the watershed, which includes your neighborhood.** This means that eligible landowners that choose to participate in this voluntary program may receive cost-share funding to rainscape part or all of their yard. Each landowner with property located in one of the Program Focus Areas is eligible to receive a rebate of **75% of approved and documented costs up to a maximum of \$4,500**, or for larger projects, **60% of approved and documented costs up to a maximum of \$6,000** for project design, implementation, and/or maintenance costs incurred for Rainscaping Cost-Share funded feature(s).

You are required to attend an orientation for landowners (if you haven't previously attended one within the past two years) to learn more about the Rainscaping Cost-Share Program if you would like to apply. Two virtual orientation choices will be offered in 2022 - **one in late February and one in early March**. If you are unable to attend one of these orientation sessions, after they have passed, you will have the opportunity to view the orientation recording and to take an on-line survey to verify watching the orientation recording to satisfy this requirement. To register for one of these orientations or to find out more about this program, visit deercreekalliance.org/cost-share.

Benefits

Rainscaping is any combination of features designed to slow down, spread out and soak stormwater into the ground, instead of allowing it to run off-site. Rainscaping can help solve drainage problems, reduce soil erosion, add aesthetic appeal, cut down on watering needs, improve wildlife habitat, achieve cleaner water in local streams, and more.

Purpose

A watershed includes all the land that drains to a particular body of water. You live in the Upper Deer Creek or Windrush Creek sub-watershed, so any rainwater that falls on your property will eventually end up in Deer Creek. The more neighbors that voluntarily participate in this program, the more we will be able to filter pollutants before they reach these creeks, as well as help prevent localized flooding from uphill neighbors, stream bank erosion, and property loss.

Our goal is to be sure all eligible landowners are aware of this opportunity. For additional details and to find out more about this program, visit deercreekalliance.org/cost-share. If you have any questions or concerns, please contact the Rainscaping Team at Missouri Botanical Garden at (314) 577-0202 or rainscaping@mobot.org.

Sincerely,

Glenda Abney
Director, Deer Creek Watershed Alliance
Interim Vice President, Education and Director, EarthWays Center, Missouri Botanical Garden

Deer Creek Watershed Alliance, a project of Missouri Botanical Garden, is funded by Metropolitan St. Louis Sewer District, Mabel Dorn Reeder Foundation, the Holton family, Great Rivers Greenway, Missouri Department of Conservation, and US EPA Region 7 through the Missouri Department of Natural Resources (subgrant number G19-NPS-11), under Section 319 of the Clean Water Act.