



**Stormwater Committee
Committee Meeting Agenda
December 8, 2021
6:00 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 6:00 p.m. on Wednesday, December 8, 2021, 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/88329576321>
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 883 2957 6321 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, December 7, 2021. Submit questions and comments to Matt Wohlberg, City Engineer, at mwohlberg@crevecoeurmo.gov.

I. Call Meeting to Order

II. Roll Call

III. Approval of the Agenda

IV. Approval of Past Meeting Minutes

A. October Stormwater Committee Meeting

1. **Approval of October 13, 2021 Stormwater Committee Meeting Minutes**

B. November Field Trip

1. **November Field Trip Photos**
2. **Approval of November 3, 2021 Stormwater Committee Meeting Minutes**

V. Public Comments

No residents had requested to speak at this meeting as of Friday, December 3.

VI. New Business

A. Capital Improvement Program

- i. **Engineer / Project Manager**



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The current year of the capital budget includes the addition of project management staff to assist with administering the new parks and stormwater programs. Staff will provide an update regarding the progress in filling this position.

ii. FY2023-FY2027 CIP

The City has recently begun its annual update to the five-year Capital Improvement Program (CIP) with a call for residents to suggest projects for the CIP. The CIP is the City's mechanism to allocate funding for long-lasting improvements to the City's facilities, infrastructure, and equipment. A project or purchase must cost more than \$20,000 and must have an expected life of 5 years or more to be considered a "capital improvement."

Staff will present a draft of the CIP to the City Council on February 25, 2022. The CIP will be evaluated through a series of public meetings before it is presented to the City Council for adoption in April or May.

The Stormwater Committee will be encouraged to make a recommendation regarding the CIP to the City Council. Staff suggests that such a recommendation be submitted in February 2022. In order to be considered, the Committee's recommendation should be submitted before the CIP is adopted by the City Council.

B. Stormwater Policy

The City's code of ordinances provides regulations regarding stormwater and stormwater-related issues, but the City does not currently have a specific stormwater policy document. Dick Kutta has drafted a stormwater policy for the Stormwater Committee's consideration and discussion.

1. Draft Stormwater Policy

VII. Unfinished Business

A. Stormwater Management Plan

Staff provided the Stormwater Committee with a suggested schedule for the development of a stormwater management plan. A copy of that schedule is included in the meeting packet.

Staff has also provided a recommendation for which goals to pursue with the stormwater management plan. The Committee is asked to consider these goals and to decide whether to support the staff recommendation.

i. Stormwater Management Study and Plan

Laura Catalano has developed a draft of goals for the City's stormwater management plan for the Stormwater Committee's consideration.

Staff has developed two recommendations for the Committee's consideration: 1) a recommended process to follow for the development of the stormwater management plan, and 2) a recommended scope for the stormwater management study.

1. Stormwater Management Plan - Draft Goals

2. Stormwater Management Plan - Recommended Process



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3. Stormwater Management Study - Staff Recommendation

VIII. Business from Committee Members

A. 2022 Meeting Schedule (Judy Campbell)

i. Monthly/Semi-Monthly Meetings

The Stormwater Committee typically meets every other month. Judy Campbell would like the Stormwater Committee to consider meeting on a monthly basis due to the number of issues that the Committee is currently considering.

ii. January MSD Presentation

The Stormwater Committee invited MSD to make its town-hall presentation about its funding status to the residents of Creve Coeur on January 12. The Committee is asked to decide whether to continue as planned, to add typical Committee business after the MSD presentation, or to postpone this presentation so that the Stormwater Committee can hold a typical committee meeting instead.

IX. Business from Staff Liaison

A. Citizen Survey

The City has recently completed its triennial resident survey. You can find a brief description of the survey and a link to the survey itself on the City's website at: <https://www.crevecoeurmo.gov/CivicAlerts.aspx?AID=1236>.

B. Strategic Plan

The Creve Coeur City Council uses a Strategic Plan to set the City's short-term and long-term goals on a variety of issues. These goals are relevant to the City's budget and which issues staff attempts to address. The City has begun to consider updates to its Strategic Plan, with the goal of developing a draft plan by the end of January 2022. Adoption of the strategic plan by the City Council could be in spring 2022.

C. In-Person or Virtual Meetings

The Committee voted in August to continue meeting virtually through the December meeting. Staff asks for the Committee to determine:

- 1) if it wishes to return to in-person meetings or if virtual meetings will continue
- 2) if the preferred meeting arrangement will apply to one meeting or several meetings, with the possibility of being reconsidered as conditions related to the pandemic evolve.

D. Next Meeting

The next meeting of the Stormwater Committee is scheduled to begin at 4:45 p.m. on Wednesday, January 12, 2022.

X. Adjourn



**Stormwater Committee
Committee Meeting Minutes
October 13, 2021
4:45 PM
Online**

Meeting Connection Information

As a precautionary measure to help prevent exposure to and spread of COVID-19, this Stormwater Committee meeting was held virtually as a Zoom meeting.

I. Call Meeting to Order

II. Roll Call

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

III. Approval of Agenda

The Committee amended the meeting agenda to:

- 1) move the discussion regarding Ferntop Lane (Unfinished Business item C(i)) earlier in the meeting under Public Comments due to the adjacent residents' presence at the meeting.
- 2) move the discussion regarding pipe lining along Hammersmith (Unfinished Business item C(ii)) to Business from Committee Members

IV. Approval of Minutes

1. Approval of August 11, 2021 Stormwater Committee Meeting Minutes

The August meeting minutes were approved following two clarifications to the discussion regarding the concerns along Ferntop Lane.

RESULT:	ACCEPTED AS AMENDED [UNANIMOUS]
AYES:	Jaffe, Catalano, Campbell, Kutta, Brown, Rizzo, Feldman, Gerst, Sharpe

V. Public Comments

Melissa Inkley (12958 Ferntop Lane) and Jim Hearne (12970 Ferntop Lane) attended the meeting to discuss their concerns regarding the drainage channel behind their homes. Mrs. Inkley narrated during two videos that she provided for the Committee to view the nature of her concerns with stormwater runoff, sinkholes in her yard, and erosion along the stream channel.



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Mrs. Inkley and Mr. Hearne reported that MSD has informed them that the pipe repairs are waiting for supplies and answered some questions regarding the nature of the issue and the repairs that they hope to see from MSD.

VI. New Business

A. Committee Field Trip

The Committee decided to try to conduct a field trip in November. The field trip will show the Committee members different types of stormwater concerns (like flooding and erosion), upcoming projects (like Alden Lane), and completed projects (like Middlebrook Drive). The goal is for the field trip to last 1.5-2 hours. Staff will coordinate with the Committee members to determine a day and time when a majority of the members are available.

VII. Unfinished Business

A. MS4 Audit

Staff reported that the Department of Natural Resources found the City to be "in compliance" with its stormwater responsibilities during their audit of the City's stormwater practices on August 17.

1. MS4 Audit Report

RESULT:	ANNOUNCED
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B. Capital Improvement Program Updates

i. Conway Park Path Improvements

Staff summarized the City's planned project to replace the walking path and several related stormwater facilities at Conway Park during the spring of 2022. The stormwater components of the project include the replacement of several failing culverts beneath the path and the removal of two concrete swales that lead to the park's pond. Funding for the project will come from the Parks and Stormwater Tax Fund and a Municipal Park Grant.

ii. New Engineer Hire in CIP

Staff stated that advertisements for the engineering position began in the summer of 2021, but few people have applied. The Committee asked about the qualifications that are sought for the new employee and the salary that is being offered.

iii. Stormwater Management Study

Staff plans to prepare a recommendation to the Stormwater Committee regarding the possible scope of the stormwater management study and the potential cost of that study for the Committee's review at the December meeting. Staff plans to send the recommended scope of the stormwater management plan to the Stormwater Committee in November.

Council Member Carney suggested that staff and the Stormwater Committee provide several options regarding the stormwater management plan for the City Council's consideration.



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Staff stated that the recommended study would be presented to the City Council as part of the upcoming annual Capital Improvement Program planning.

iv. Stormwater Project Designs

Staff stated that their intent is to complete the review of engineering firms' qualifications so that contracts for stormwater designs could be presented to the City Council by the end of the year.

v. Identification of a Project in the CIP

Judy Campbell asked how projects get added to and removed from the stormwater project list. Staff stated that projects are added by staff when they come to staff's attention. Staff plans to wait for the development of the stormwater management plan to review the scope and cost of larger projects that have recently come up (such as the erosion concerns at Villa Coublay).

Staff summarized how a stormwater project would be recommended for and then included in the Capital Improvement Program (CIP) and how projects can change from year to year within the CIP as conditions evolve.

Laura Catalano asked about a concern at 1020 and 1028 Fernview Drive that was reviewed as part of the 2012 update to the stormwater master plan, stating that this project appears to have been removed from the list. Staff stated that the Stormwater Committee had reviewed the project list and determined that several issues were considered to be private property issues. Private property issues had been hidden from view in the spreadsheet. Staff stated that they would re-evaluate whether this issue should be considered a public or private issue.

C. Project Updates - MSD Projects

i. Pipe Repairs - 12958 and 12970 Ferntop Lane

Discussion regarding this item was covered under Public Comments.

1. MSD Work Summary - 12958 Ferntop Lane

RESULT:	ANNOUNCED
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2. MSD-Inkley Updates for 12958 Ferntop Lane

RESULT:	ANNOUNCED
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ii. Pipe Lining - Hammersmith

Mary-Helen Gerst recounted her recent experience with an MSD project for pipe lining. The project involved a strong smell and smoke or steam emitting from the storm drains. MSD did not communicate the project to the area residents, and this led to some confusion and concern among the residents of Ms. Gerst's neighborhood.

Judy Campbell asked if the City could alert to neighborhoods of utility work such as this. Staff stated that the City can inform residents about only those utility projects that the City is aware of. Advance notice of projects - especially smaller ones - is not always given.



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D. Committee Information Folder Updates

Judy Campbell thanked Dick Kutta for helping to update the resource folder.

VIII. Business from Committee Members

A. Flood Risk Hazard Notice (Jaffe)

Martin Jaffe had asked that the Committee to consider that the Federal Emergency Management Agency (FEMA) has reinstated more stringent requirements for some structures to be rebuilt if located in a flood plain, a disaster declaration is issued, and the City uses federal grant funds to assist with recovering from the disaster. Staff stated that this change is generally a need to rebuild a home an additional one foot higher in certain disaster situations and stated that the City would be unlikely to encounter this requirement.

B. Stormwater Policy (Campbell)

Judy Campbell stated that some residents have been confused about how a stormwater regulations, and how stormwater improvements are prioritized and addressed. She asked the Committee to consider a stormwater policy that would provide guidance for the City regarding stormwater matters.

Staff asked if this should be incorporated into the Stormwater Master Plan.

Discussion of the stormwater policy was postponed to the December meeting due to connection issues among some of the members.

C. Definition of "Waters of the United States" (Jaffe)

Martin Jaffe stated that the definition of "Waters of the United States" has changed again. He was concerned that this change could lead to strict regulations, particularly regarding water quality in streams.

D. MSD Townhall Meetings (Campbell)

Judy Campbell and Laura Catalano reported that MSD's message in their town hall meetings is that MSD has stormwater funding for only maintenance of their current system. There was some discussion that these meetings were being held to prepare for a future MSD request for additional stormwater funding.

Most of the Committee stated that they have attended one of the MSD town hall meetings.

Ms. Campbell asked if the Committee wanted MSD to make a town hall meeting specific to Creve Coeur where the Stormwater Committee could ask MSD questions about their program.

Mary-Helen Gerst suggested that the Committee develop a list of questions ahead of time.

The Committee supported adding a Stormwater Committee meeting on January 12, 2022, for the purpose of having MSD present to both the Committee and the Creve Coeur public.

IX. Business from Staff Liaison

A. Ethics Training Recap

There was a brief discussion about ethics and ethics training.



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B. December Meeting

Staff reminded the Stormwater Committee that the December meeting was scheduled for 4:30 p.m. on Wednesday, December 8, 2021.

X. Adjourn

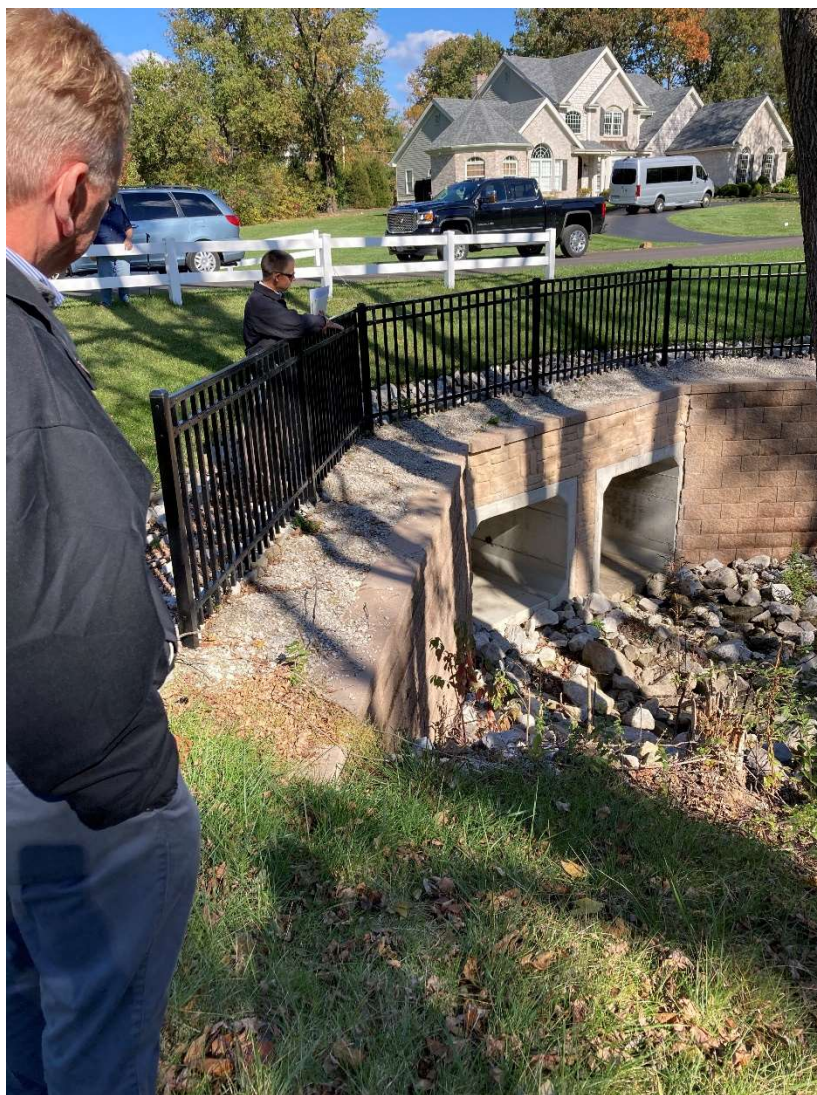
The meeting adjourned at approximately 6:50 p.m.

November 3, 2021 Creve Coeur Stormwater Committee Field Trip

Photos and captions from Laura Catalano, Stormwater Committee Vice Chair.

Middlebrook Culvert

We inspected the road culvert completed in 2020.



Alden Lane Culvert Failure

Sinkhole marked by cones is about 4 feet wide and 2-3 feet deep.



Malcolm Terrace Park Bridge and Path

This low water concrete bridge has metal culverts below that are rusting through and no longer functional.





Conway Park

Conway Park retention pond.



Chamblee Lane

There was 3ft of water in this house in a summer 2020 flash flood. The house is currently unoccupied.



Communication: November Field Trip Photos (November Field Trip)

Ferntop Lane

No photos.



**Stormwater Committee
Committee Meeting Minutes
November 3, 2021
1:00 PM
City Council Chamber**

I. Call Meeting to Order

Laura Catalano called the meeting to order at approximately 1:00 p.m.

II. Roll Call

Martin Jaffe	Committee Member	
Laura Catalano	Vice Chair	
Judith Campbell	Chair	(Excused)
Richard Kutta	Committee Member	
Patrick Brown	Committee Member	(Excused)
Kathleen Rizzo	Committee Member	(Excused)
Bernard Feldman	Committee Member	
Mary Helen Gerst	Committee Member	
Elliot Sharpe	Committee Member	
Tim Carney	City Council Member (Ward 2) and Council Liaison	
Joseph Martinich	City Council Member (Ward 4)	
Jim Heines	Public Works Director	
Matt Wohlberg	City Engineer	

III. Approval of Agenda

After brief discussion, the Committee approved the agenda and departed the Creve Coeur Government Center for Middlebrook Drive.

IV. Committee Field Trip

The Stormwater Committee will depart the Creve Coeur Government Center to review stormwater-related issues at several locations around Creve Coeur.

A. Middlebrook Culvert

The Committee review the recently completed culvert and retaining walls that were installed at Middlebrook Lane in 2020. This project replaced a failed drainage culvert that had undermined a portion of the Middlebrook Lane pavement. Staff pointed out that the nearby residents seemed to be pleased with the end result of the project and that trees would be planted along the area of disturbance later in November 2021.

B. Alden Lane Culvert Failure

The Committee reviewed a failing storm pipe that has caused a hole to form above it. Although the initial hole was filled in 2020 as a temporary measure, a new hole has formed. Staff showed the Committee that both the drains and the pipes in this short system were non-standard facilities. Staff stated that this system was planned to be replaced in 2022.

C. Malcolm Terrace Park

The Committee visited two locations along Deer Creek in Malcolm Terrace Park to see the scope of erosion along the creek and how that erosion impacts the walking path in the park.

Minutes Acceptance: Minutes of Nov 3, 2021 1:00 PM (November Field Trip)



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D. Conway Park Lake and Culverts

The Committee entered Conway Park from the western pedestrian entrance at the end of Ladue Woods Drive. The Committee saw a failing culvert and the concrete swale that will be replaced in the spring of 2022. There was also a brief discussion regarding the lake and the need to dredge out years of siltation from it.

E. Chamblee Lane

The Committee walked to the back yard of #17 Chamblee Lane, a home that was damaged in the flash flood event on August 8-9, 2020. Laura Catalano mentioned that the City may want to consider whether to limit stormwater funding for flood mitigation within the regulatory flood plain.

F. Ferntop Lane Channel

The Committee met with Melissa Inkley (12958 Ferntop Lane) to review her concerns about sinkholes and erosion in her back yard and along the channel behind her home and behind 12970 Ferntop Lane.

Erosion in the neighboring yard at 943 Ferngate Lane was also discussed. Staff mentioned that this neighbor might benefit from placing gabion rock along their hillside due to its steep slope.

V. Business from Staff Liaison

A. Reminder: December Meeting

A reminder about the December Stormwater Committee meeting was included on the agenda but was not discussed.

VI. Adjourn

The Stormwater Committee's field trip adjourned from 12958 Ferntop Lane at approximately 3:30 p.m.

Minutes Acceptance: Minutes of Nov 3, 2021 1:00 PM (November Field Trip)

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.
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 only be eligible primarily 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 **TBA** feet above the maximum expected flood water level.
6. Reserve flood-prone areas for low loss risk 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 advise Council their opinion on which projects should be retained, advanced or removed.
10. Stormwater projects should be distributed throughout the City to benefit the greatest number of residents.
11. Stormwater projects that reduce ongoing operating costs or minimize public property losses should receive high priority.
12. Maintenance of creeks and drainages is the responsibility of property owner.

Draft Stormwater Master Plan Study Goals

Prepared by Laura Catalano, Creve Coeur Stormwater Committee Vice Chair
December 6, 2021

Background

The City of Creve Coeur first created a Stormwater Master Plan (SWMP) in 1999 and updated it again in 2012. Due to lack of funding, most projects were not completed. In November 2020, voters in Creve Coeur approved a half-cent sales tax dedicated to finance operations, maintenance, and capital improvements for the City's parks and stormwater infrastructure. The City now needs to update the SWMP and create a project priority list for the Capital Improvement Plan (CIP).

Goals

Primary

1. Collect data to develop a new Stormwater Master Plan:
 - a. Review all concerns in 1999 and 2012 Stormwater Master Plans (some projects have been completed by homeowners, others are worse due to recent heavy rain storms, some concerns extended to more properties that were originally listed in the program)
 - b. Review all concerns documented in 2012-21 Stormwater Committee meeting minutes
 - c. Add an online stormwater concern questionnaire to website for resident concerns (example: Frontenac)
 - d. Survey city residents for new concerns
 - e. Acquire stormwater concerns records and stormwater infrastructure condition/status from Metropolitan Sewer District (MSD)
 - f. Inspect city properties and infrastructure for stormwater condition and maintenance needs (examples: roadside drainage, culverts, retention/detention ponds)
 - g. Inspect select MSD infrastructure (pipes, inlets, culverts, etc.) for age, condition and maintenance issues or ask MSD for condition report
 - h. Do ground/walk or aerial surveys to visually identify areas of flooding or erosion
2. Create a comprehensive hydrologic map of the City of Creve Coeur including stormwater concern locations, creeks, streams, and major stormwater infrastructure (i.e. detention and retention ponds)

3. Analyze patterns of flooding (outside of the 100yr FEMA Flood Plain) and erosion and identify recurrent and/or widespread problems
4. Update the SWMP and create a list of projects to repair and prevent stormwater damage to residential and city properties in the City of Creve Coeur
5. Demonstrate how stormwater projects meet the Creve Coeur Capital Improvement Program (CIP) Criteria and Goals such as Economic Growth, Public Safety, Citizen Demand, and Beautification
6. Provide a legal framework and policy for managing stormwater program funds (i.e. Stormwater Policy and updates to Creve Coeur City Code and Ordinances)

Secondary

1. Consider “Green Infrastructure” stormwater project solutions such as bioswales, permeable pavement and rain gardens, that improve water quality and create wildlife habitat
2. Engineering designs should consider response to severe rainstorms such as August 9, 2020
3. Educate the residents on benefits of stormwater projects and best management practices through community outreach programs and an updated website
4. Coordinate with Parks and Historic Preservation Committee, Public Works Department Streets and Sidewalks program, and their CIP master planning process



Matt Wohlberg <mwohlberg@crevecoeurmo.gov>

Stormwater Management Plan Recommendations

1 message

Matt Wohlberg <mwohlberg@crevecoeurmo.gov>

Fri, Nov 19, 2021 at 8:58 PM

To: Matt Wohlberg <mwohlberg@crevecoeurmo.gov>

Cc: Jim Heines <jheines@crevecoeurmo.gov>, Tim Carney <tcarney@crevecoeurmo.gov>

Bcc: Bernard Feldman <feldmanb@umsl.edu>, Dick Kutta <richardkutta@earthlink.net>, Elliot Sharpe <lynda-elliott@att.net>, Judy Campbell <jacampbell314@gmail.com>, Kathleen Rizzo <krizzo@stlcc.edu>, Laura Catalano <lauracatalano@gmail.com>, Martin Jaffe <martin.jaffe@mjaffegroup.com>, Mary Helen Gerst <maryhg@sbcglobal.net>, Patrick Brown <pbrown6@me.com>

Dear Stormwater Committee,

The December meeting agenda will include discussion about updating the City's stormwater management plan. I have a few recommendations for that discussion and for the process for developing the plan.

Step 1 - Set Goals for the Program

Schedule: Winter 2021-2022

At the December meeting, I think the Stormwater Committee should focus on setting goals for the stormwater management plan. These goals do not need to be set in stone, but they should serve as a guide for the next steps in the process. Some simple yet significant questions need to be answered, including:

1. Does the Stormwater Committee support the development of a plan for its stormwater program?
2. There are several issues or topics to consider with the stormwater management plan, including:
 - Flooding and flood plains
 - Erosion
 - Infrastructure (MSD system, City's facilities, locations with inadequate drainage)
 - Water quality
 - Wildlife habitat
 - Private property (backyard concerns, detention basins, etc.)

Which among these issues are suitable goals for the plan? Maybe a better question is which among these issues can or should we eliminate from consideration now? These will be good questions to consider for discussion at the next meeting.

Step 2 - Data Collection

Schedule: Spring 2022

The main portion of this step will be a survey of the residents of Creve Coeur to get a list of stormwater concerns and reports of stormwater problems from throughout the City. This would be similar to what was done in 2011, and I imagine that we will get reports of 50-100 concerns.

Step 3 - Site Investigations

Schedule: Summer 2022-Spring/Summer 2023

During the data collection phase, we would start the process of hiring a consultant to review the City's previous stormwater plans, the issues reported from the survey, and any other relevant information available from the City, MSD, Deer Creek Watershed Alliance, etc. I imagine that we would have the consultant begin their investigation next summer. How long the investigation takes will depend on our goals for the plan.

The site investigation would involve evaluations of the City's properties, streams within the City, the issues from the survey, and the issues remaining from the 2011 master plan update. The goal would be to get an understanding of the cause and severity of each issue, as well as the scope and rough cost to address each issue.

Step 4 - Report of Stormwater Needs

The consultant's investigation effort would culminate with a report to document all of their findings. This report would include details of each issue they investigated and a map of the issues.

This report would include a prioritization methodology and a preliminary prioritization of the stormwater issues.

Step 5 - Select Issues for Preliminary Designs

The Stormwater Committee would be asked to review the report, priorities, and location, nature, and cost of the issues to develop a list of sites to advance to a preliminary design. (Preliminary design is at about 30-50% completion. At this stage in the design, the general scope of the project should be determined and the easement needs should become clear.) With these designs, the projects can be accurately prioritized, and the project can be reviewed with adjacent homeowners to determine their willingness to provide any easements needed for the project.

Not all projects in the report would advance to this stage, and it may be that not all of those that are evaluated in this stage move on. There will be some projects that the preliminary design will find to be more work than anticipated and others where the adjacent property owners refuse to provide easements. I think the goal should be to develop about 15-20 years worth of viable projects from these preliminary designs.

Step 6 - Prioritize Projects into the Capital Improvement Program

The final planning step would be to program the design and construction of projects into the five-year capital improvement program. Projects would not advance to this stage unless there is a commitment from the adjacent homeowners to provide the necessary easements.

We have previously proposed advancing several projects to preliminary design (step 5) now in order to fill in the gap between the immediate construction projects and the completion of the stormwater management plan.

I hope that this explanation of how I envision the process of plan development helps to guide the discussion in December to set goals for the stormwater management plan.

Thank you,

Matt

CITY OF CREVE COEUR

Matt Wohlberg, PE

City Engineer / Assistant Director of Public Works

Certified Floodplain Manager (CFM)

Envision Sustainability Professional (ENV SP)

300 N. New Ballas Road

Creve Coeur, MO 63141

Phone: (314) 442-2084

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www.creve-coeur.org



DEPARTMENT OF PUBLIC WORKS STAFF MEMORANDUM

DATE: December 6, 2021

TO: Stormwater Committee

FROM: Matt Wohlberg, P.E., City Engineer

SUBJECT: Evaluation of Stormwater Management Plan Options

There are numerous variations of what the City can expect from its stormwater management plan, and much of that depends on the City's goals for the plan and the anticipated scope of the City's stormwater program. Several basic options are outlined below, followed by the staff recommendation and a general outline of the anticipated stormwater management plan process.

Approaches to the Stormwater Management Study

Three options are summarized for how to approach the stormwater management study. Generally, these options include one with relatively little up-front design work, one with a lot of up-front design work, and one that falls in between the two.

All options generally follow the path of data collection then development of the stormwater management plan. In every case, the City would request residents to submit their concerns for evaluation, and the residents' concerns, issues known to staff, and issues from past iterations of the stormwater management plan would be evaluated for inclusion into the new stormwater management plan. Further, in each option, the data that is collected will be evaluated, prioritized, and mapped. The highest-priority projects will then be incorporated into the Capital Improvement Program (CIP).

Option #1 – Address Resident Concerns and Emergencies

The City's most basic option would be to update the City's current stormwater master plan with an initial effort similar to the master plan update in 2011-2012. The stormwater management study could take the 2012 effort a step further to develop conceptual plans for the highest priorities to help have accurate capital improvement programming.

Key aspects to this option:

- Develop conceptual plans for the highest-priority projects, with a goal to program about 10 years of projects

Anticipated Costs:

Needs assessment/data collection:	\$50,000 - \$100,000
<u>Develop Stormwater management plan:</u>	<u>\$75,000 - \$100,000</u>
Total cost:	\$125,000 - \$200,000

Benefits

Low cost
May be the fastest to implement
Relatively easy to update

Drawbacks

Program is complaint and emergency driven
Little investigation into streams

Option #2 – Determine Highest Priorities and Tailor the Site Work to Address Those Priorities

A second approach to the stormwater management study would be to gather information incrementally, with the scope of each step in the process being evaluated based upon the findings from the previous step. This option would add an initial review of the City's stream network to Option #1 described above, and this would broaden the understanding of stormwater within Creve Coeur and would expand the scope of the City's stormwater program.

Key aspects of this option include:

- Perform a walking evaluation of the streams, culverts, and bridges throughout Creve Coeur during the initial phase of the study
- Conduct a hydraulic analysis of streams where high-priority issues are found
- Develop conceptual plans for the highest-priority projects and/or project areas, with a goal to program about 10-15 years of projects
- Program highest-priority projects into the capital improvement program

Anticipated Costs:

Needs assessment/data collection: \$150,000 - \$200,000

Develop Stormwater management plan: \$200,000 - \$300,000

Total cost: \$350,000 - \$500,000

Benefits

Provides an in-depth and efficient program
Allows for a pro-active stormwater program for streams and infrastructure
Stream improvements can be based upon the entire stream instead of one area
Plan costs are limited to the highest-priority concerns

Drawbacks

Budget may be significantly greater than what is used
An experienced consultant is needed to guide program development
Potential for larger projects along streams that could take multiple years of funding to address

Option #3 – Develop the Plan Based upon a Comprehensive Study of the City

A third approach would be to begin the development of the stormwater management plan with the goal of creating a comprehensive hydrologic and hydraulic model of the City of Creve Coeur. Such a study would give the City the best information regarding how stormwater behaves in the City. Such information would be essential if the City were to use stream protection or similar factors in its designs or regulations for development. Otherwise, the plan-development process would follow a similar path as laid out above in Option #2.

Key aspects of this option include:

- Perform in-depth analysis of all streams, drainage channels, and stormwater infrastructure to build a comprehensive stormwater model of the City.
- Develop conceptual plans for the highest-priority projects and/or project areas, with a goal to program about 10-15 years of projects

Anticipated Costs:

Needs assessment/data collection:	\$50,000 -- \$100,000
Develop Stormwater management plan:	\$800,000 - \$1,000,000
Total cost:	\$850,000 - \$1,100,000

Benefits

Provides comprehensive evaluation of stormwater in Creve Coeur, which could result in better understanding of flooding throughout the City

Allows for a pro-active and forward-thinking stormwater program

Data allows for more accurate stormwater regulations and for goals like channel protection

Drawbacks

High cost

Likely will result in more information and analysis than the City will be able to use before the plan is updated

Potential for larger projects along streams that could take multiple years of funding to address

Achieving goals like stream protection can make regulations more complicated

Approaches Taken by Nearby Cities

Staff reviewed the approach used by Creve Coeur's neighbors when developing the cost estimates included in this report and the recommended approach for the stormwater management study.

Ladue

The City of Ladue developed a stormwater management plan during the period of 2015-2017. The Ladue process involved two primary steps:

Needs Assessment (\$160,000) – Numerous residential concerns were gathered and evaluated. Meanwhile a walking preliminary analysis of the streams in Ladue was conducted (Deer Creek was not evaluated due to the availability of existing information about it). The stream and concern data were mapped to determine areas with common or numerous issues (called “hot spots”).

Plan Development (\$350,000) – Ladue completed conceptual design of 55 stormwater projects based upon the hot spot mapping. Hydraulic modeling was needed for each of these conceptual designs, because much of Ladue's stormwater infrastructure involves channelized runoff. In total, the Ladue stormwater management plan lists an estimated \$114,000,000 in stormwater improvement projects. The five projects with the highest benefit-to-cost ratio were selected as the initial five-year stormwater capital improvement plan.

Frontenac

The City of Frontenac developed its stormwater management plan in 2005. The development of the Frontenac Plan involved the following:

Needs Assessment (\$35,000) – Residential questionnaires were issued to develop a list of stormwater concerns among the Frontenac residents.

Plan Development (\$500,000) – The Frontenac plan created a city-wide hydraulic model to determine areas in the watershed with stormwater issues. The Frontenac plan is generally updated every five years to incorporate new projects into the priority list. The Frontenac website lists \$33,000,000 of stormwater capital improvements that are scheduled through the year 2056.

The stormwater management study has been used by Frontenac to develop their stormwater regulations.

University City

University City is currently in the initial stages of developing a stormwater management plan. Their approach will be similar to that of Ladue, but involves less up-front modeling due to the amount of MSD infrastructure that conveys stormwater and their limited budget to address stormwater issues.

Staff has not yet requested the cost of the University City study.

Recommendations for the Stormwater Management Study

Staff recommends that the City pursue a study that resembles Option #2 above. Through this option, the City would conduct a study that initially considers all streams, issues, and complaints but then focuses the design effort on addressing the issues that are found to be of high priority. This approach would initially be similar to that of Ladue but would eventually resemble what is anticipated of University City's study. In other words, the study would involve in-depth analysis of the City's most pressing needs but would not analyze all potential projects.

Conceptual design plans are recommended for priority projects that sum up to \$10-\$15 million. Such a project list would exhaust the anticipated stormwater budget in the capital improvement program for 10-15 years while providing some "backup" projects that could move up the list if one or more projects needed to be delayed due to a change in circumstances.

One of the primary reasons that staff recommends this approach is the economical use of resources – in terms of financing, personnel, and opportunity. The City will not see the benefit of designing solutions for all of the stormwater issues if only a fraction of those issues can be addressed in the 10-15 years before the plan is due to be updated. Further, the stormwater management plan needs to provide accurate and useful information so that capital improvements can be programmed in the CIP. A stable capital program is easiest to understand, is easiest to manage, and maximizes the amount of design and construction in each year.

This recommendation also assumes that the stormwater management plan aims to address certain issues (such as erosion and infrastructure deficiencies) as primary goals but relegates other goals (such as water quality and channel protection) as secondary considerations. Addressing flooding is a complicated topic, as the expense to address flooding can make such a project impractical and/or unachievable. However, there may be areas where modest changes can limit or eliminate roadway or structural flooding, and staff recommends that projects such as these receive high priority.