

**Callaway County Urbanized Area MS4
Stormwater Management Plan (SWMP)
(Permit #: *MOR04C009 / 2021 - 2026*)**

June 23, 2022

Introduction

The purpose of this SWMP is to meet the requirements of the comprehensive general permit for small MS4's and document the BMP selections made under that permit for the portion of unincorporated Callaway County that falls within the Jefferson County Urbanized Area as determined by the most recent census data. The County falls under the permit designation of "Group A" as it is a small MS4 within a Class 2 County. During annual reviews of this document, and the MS4 program as a whole, the County may choose to replace or modify ineffective BMPs with effective BMPs.

MOR04C PART 4. MINIMUM CONTROL MEASURES

4.1 **MCM 1. Public Education and Outreach on Stormwater Impacts**

Callaway County has begun to implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff. The public education and outreach program includes the following:

4.1.A Target specific audiences who are likely to have significant stormwater impacts.

Callaway County will target residents of their community that are served by the MS4. Various subsets of each of this group will be selected each year based on identified needs.

The target audience may remain the same for the entire permit cycle or may change if the tracking and adaptive management reviews show a new target may be better for the MS4. Any changes will be stated and explained in the MS4 Stormwater Management Program Report.

4.1.B Callaway County will target specific pollutant(s) in their education program. The County has no specific pollutants of concern related to their residents, but will cover a variety of the most common urban stormwater pollutants within their public outreach and education program. Some example pollutants are listed below in Table II. Each year, the County will determine the best target pollutants for the residents or a subset of them.

Table II- Example Pollutants/ sources (not limited to this list)

- | |
|--|
| <ul style="list-style-type: none">• Grass clippings & leaf litter;• Fertilizer & pesticides;• Litter, trash containment, balloon releases;• Dumping of solid waste;• Illegal disposal of household hazardous waste;• Pet waste;• Failing septic systems;• Swimming pool discharge, including salt water pools;• De-icing/ rock salt usage/ storage;• Oil, grease, fluids from vehicles;• Sediment runoff from construction/land disturbance;• Unauthorized discharge of restaurant waste;• Power washing;• Unauthorized discharge of industrial waste;• Vehicle washing; and• Wash water/ grey water. |
|--|

4.1.C Callaway County will utilize appropriate educational resources to be used as BMPs (materials, events, activities, etc.) in conjunction with the selected pollutants for the target audience. The County may change BMPs during the permit cycle if determined appropriate through tracking and adaptive management reviews show a different BMP may be more effective for the MS4. Any changes will be reflected in the SWMP and explained in the MS4 Stormwater Management Program Report.

A more detailed description of any specific subset of the broader target audience (residents) as well as any specific target pollutants addressed to this audience will be documented in the annual MS4 Stormwater Management Program Report.

1. Using **Table III**, over the permit term the County will implement a minimum of the following, including the tracking and adaptive management processes:

Table III - Outreach and Education BMPs

	BMPs:	Measurable goals (The quantity or frequency required to count as a full BMP)	Tracking & Adaptive Management
1	Information on the County website;	Maintain a webpage with up to date information, & working links. All links will be checked, and the page will be updated as necessary at minimum annually. Must be maintained the entire year.	The number of hits will be tracked. The County will use this to see which messages get reactions, and if certain messages may need more education.
2	Social Media posts, social media campaign;	Post a minimum of four (4) times a year, on a minimum of one social media platform. The messages will address ways residents can minimize or avoid adverse stormwater impacts or practices to improve the quality of stormwater runoff. The messages will be seasonally appropriate. Must be continued for the full year.	The number of views, impressions, and other interactions will be tracked. The County will use this to see which messages get reactions, and if certain messages may need more education.

4.1.D Callaway County will create opportunities, or support activities that are coordinated by citizen groups, for residents and others to become involved with the Stormwater Management Program. The activities, (BMPs) will have an effort to impact stormwater runoff by improving water quality.

A more detailed description of any involvement BMPs completed and the metrics associated with them will be documented in the annual MS4 Stormwater Management Program Report.

Table IV Involvement BMPs

BMPs	Measurable goals (The quantity or frequency required to count as a full BMP)	Tracking & Adaptive Management
Ongoing household hazardous waste collection	Provide the service as an annual occurrence or at readily accessible location.	Track the amount collected. If educational information is being used in conjunction with this activity track for changes due to the education. Tracking can be used with illicit discharge tracking, to determine if the rate of this type of discharges or dumping were reduced.

4.1.E Callaway County will create or support the involvement BMP(s) in Section 4.1.D.

4.1.F Using adaptive management as required in parts 4.1.A.3.d and 4.1.B.1.c, Callaway County will review their Public Education and Outreach on Stormwater Impacts Program, at minimum, annually and update implementation procedures and/or BMPs as necessary within the requirements of this permit. This will be conducted when preparing the annual MS4 Stormwater Management Program Report for submittal to the Department.

Annual review of MCM 1			
Year reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2021	6/22/22	Christina Luebbert, Paul Winkelmann	Need to determine if there is a way to track the hits on the County stormwater web page; Need to figure out where we plan to post on Facebook and see if it allows for the better collection of impressions and interactions. Need to look into what it would take to get metrics from the HHW facility in Fulton an if they track the quantities collected by resident location.
2022			
2023			
2024			
2025			

4.2 MCM 2. Public Participation

Callaway County is developing and will implement a comprehensive public participation program that provides opportunities for public participation in the development and oversight of the County’s Stormwater Program.

This program provided opportunities for public participation of the County's permit renewal and, at a minimum, will comply with any state and local public notice requirements. Additionally, the program provides opportunities for public participation in activities related to developing and implementing the Stormwater Management Program.

The public participation program, at a minimum will include the following:

- 4.2.A** Callaway County held a public notice period for a minimum of thirty (30) days to allow the public to review the draft permit prior to the submission of the renewal application to the Department.
- 4.2.B** As part of the public notice, the County web site had information on where the draft comprehensive general MS4 permit and the County's former SWMP could be viewed and how comments could be submitted. No comments were received during the comment period.
- 4.2.C** Callaway County held a public information meeting to provide information on the proposed Stormwater Management Program. This meeting was advertised prior to the public meeting.
1. As part of the notice of public meeting, the County posted the notice of the public information meeting including the date, time and location of the meeting on their web site. A copy of this notice is included with this plan.
 2. The meeting was held within the service area.
- Dates of public notice: February 25, 2021 (open for public comments until March 31, 2021)
Dates of notice of meeting: February 25, 2021
Date of meeting: March 18, 2021
Location: Meeting at the Callaway County Courthouse in Fulton (near the MS4)
- 4.2.D** Callaway County has a publicly available method to accept public inquiries, comments or concerns, and to take information provided by the public about stormwater and stormwater related topics. Citizens can call, email or write a letter to the County Highway Administrator. They can also comment on the County's Facebook page. Citizens can also appear before the County Commission to bring up any issues. Inquiries and comments will be tracked on the Public Inquiries Log in Appendix A.
- 4.2.E** Callaway County does not utilize a stormwater management panel or committee. If this changes in the future, the County will provide opportunities for citizen representatives on the panel or committee and the attendance of the meetings will be recorded.
- 4.2.F** Callaway County has a governing body in the County Commission. The County's Stormwater Consulting Engineer, who is familiar with the County's MS4 Stormwater Program, will provide an update to the County Commission, at minimum, annually with the status of, or updates on, the Stormwater Management Program, and compliance with the Stormwater Management permit. The documentation of the date the County Commission was updated, the method used to update them (typically appearing at one of their regular meetings) and the name of the representative who provided the update will be provided in the annual MS4 Stormwater Management Program Report.
- 4.2.I** Using adaptive management, Callaway County will review their Public Participation Program, at minimum, annually and update implementation procedures as necessary within the requirements of their permit. This will be used to review how to best reach the public, the effectiveness of the mechanisms, the effectiveness of reaching the public and the County Commission and if the community and County government are working together for water quality. Any additional events and/or BMPs will be acknowledged in the annual Stormwater Management Program report.

Annual review of MCM 2			
Year being reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2021	6/22/22	Christina Luebbert, Paul Winkelmann	No changes needed.
2022			
2023			
2024			
2025			

4.3 MCM 3. Illicit Discharge Detection and Elimination (IDDE)

Callaway County has implemented and enforces a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200 at 40 CFR 122.26(b)(2)) into the regulated MS4.

The illicit discharge detection and elimination program, at minimum, includes the following:

- 4.3.A** A current storm sewer system map that is updated as needed to include features which are added, removed, or changed. This map is under development and will be completed in the first two permit years. At this time, it is expected that this will be a paper map.

This storm sewer map, will show at a minimum:

1. The location of all MS4 outfalls. Completed:.. This work will need to be completed in the first two years of this permit.
2. The names and locations of all receiving waters of the state that receive discharges from the MS4 outfalls. Completed: This information is already part of the base map.
3. The boundary of the regulated MS4 area. Completed: This information is already part of the base map.
4. Once the map of the stormwater facilities is completed, it will be readily available and used by field staff as needed.

- 4.3.B** Callaway County will record the sources of information used for the map and tracks:

- A numbering or naming system of all outfalls;
- Dates that the outfall locations were verified/ or last field survey;
- For newly added outfalls, the date that it was added to the storm sewer system.

- 4.3.C** Callaway County effectively prohibits non-stormwater discharges into the County’s storm sewer system and has implemented appropriate enforcement procedures and actions. The illicit discharge detection and elimination regulations are primarily found in Section II of the Callaway County NPDES Phase 2 Regulations which can be found at the following link:

4.3.D A dry weather field screening strategy has been developed for Callaway County.

1. Callaway County will conduct outfall field assessments. The screening will be conducted during dry weather conditions (a minimum of 72 hours after the last precipitation event) to check for the presence of a discharge. Total % of all outfalls to be screened during the permit cycle: 60%

Outfalls in priority areas, as determined under Section 4.3.H, will be screened annually. The number of outfalls screened each year (and percentage that this represents of the total number of outfalls) as well as how many of these outfalls are in “priority areas” will be provided in the annual MS4 Stormwater Management Program Report.

2. Dry weather screening is completed utilizing a paper checklist to ensure a complete inspection of each outfall, enhance consistency, and to track the field screening. When discharge is present, the checklist notes the following general observations and physical characteristics at a minimum: A copy of the dry weather field screening checklist is included in Appendix B.

- Date and time;
- Weather conditions and temperature (air & water);
- Color of discharge;
- Estimate of flow rate (this may be noted qualitatively);
- Odor;
- Surface scum, algal bloom, floatables or oil sheen present;
- Deposits or stains (note the color);
- Turbidity (may be noted qualitatively);
- Stream impact including vegetation, fish, wildlife;
- Length of impacted stream; and
- Notes of an obvious source of flow (such as lawn irrigation, etc.)

4.3.E Callaway County maintains diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows as part of the dry weather screening program. When flow is present during dry weather field screening or as part of an illicit discharge investigation of an outfall, the County’s Stormwater Consultant will complete the dry weather field screening form as well as attempt to determine the type of discharge present with the procedures listed below:

1. If flow from outfall is colorless, clear, odor free, with no visible floatables (oil, suds, etc): look upstream of outfall for any obvious source (sprinklers running, waterline flushing, etc). If an obvious source can be identified, note it on the dry weather field screening form. If the source of the flow is not obvious, take the temperature and pH of the flow and record that on the form. Then take a sample and test it for the presence of chlorine. This is to determine if the source is potable water. Then skip to the Tracing Procedure below.
2. If the water has a sewage smell, take the temperature and pH of the flow and record that on the form. Then take a sample and test it for Ammonia. This is to determine if the source is wastewater and, if it is, the strength of the wastewater. Then proceed to the Tracing Procedure below.
3. If the water looks muddy/dirty, take the temperature and pH of the flow and record that on the form. Then note the level of turbidity. This is likely runoff from a land disturbance and further investigation of the area draining to this outfall will be required. Proceed to the Tracing Procedure below.

4. If the water is cloudy with any kind of color or odor other than sewage, take the temperature and pH of the flow and record that on the form. Then take a sample and run a chlorine presence test (possible washwater), conductivity and dissolved oxygen test.
5. If there is a lot of algae in the pipe and/or in the plunge area outside the pipe, take the temperature and pH of the flow and record that on the form. Then take a sample and test it for Nitrogen or Phosphorous. Also note the vegetation growth around the outlet and downstream of the pipe (excessive growth, inhibited growth, dead, etc). This is likely caused by excess nutrients from overuse of lawn chemicals in the area. As you trace upstream, also note any change in odor as a sewer leak much further up the system could cause algae slick downstream without odor at the outfall itself (but rather closer to the actual sewer leak).

The County stormwater consulting engineer will note on the dry weather field screening form if any samples were taken, what they were tested for and what the outcome of those tests were.

When illicit discharges or connections are reported by the public or staff, the investigation will follow an identical procedure to the one listed above other than noting exactly how long it has been since the last rainfall and listing the inches of rainfall received. Once a possible illicit discharge or connection has been located (either through complaint/report investigation or through routine field screening), the potential source of the illicit discharge or connection shall be investigated following the tracing procedures in Section 4.3.4.

4.3.F Callaway County maintains procedures for tracing the source of an illicit discharge.

If initial screening indicates that a dry weather discharge contains pollutants, or if an illicit discharge is suspected from another reporting method, the source will be traced.

1. Inspect the next structure upstream of the outfall to determine if the discharge is somewhere in the last enclosed segment. Once completed, the stormwater system map will assist in locating the upstream structures.
2. Continue upstream as long as the discharge is present within the structures until you isolate where the discharge is entering the system.
3. While tracing within the system, look for possible sources of the discharge such as active construction/remodeling sites, sprinkler systems running (or obviously run recently), locations of sanitary sewers in the area, etc. If a source can be identified, note it on the screening form. If it is anything other than sprinkler water or air conditioning condensate, proceed with enforcement actions applicable to the type of source.
4. If the discharge appears to be wastewater in nature, the inspector will attempt to determine if the source private or public. If it is public, the inspector will contact the Holts Summit Wastewater Superintendent to assist with the investigation. CCTV inspection of sanitary and storm sewer lines may be utilized. Confined space entry should only be used by properly trained personnel and only when necessary. If it appears to be coming from an area without public sanitary sewer service (on-site wastewater treatment), the inspector will contact the Callaway County Health Department to assist in the investigation and enforcement activities.
5. If the discharge appears to be potable water, contact the water district to assist with the investigation to determine if it is a possible potable water leak.

Once the source of an illicit discharge or connection has been located and verified, the source will be removed through the enforcement procedures listed below.

4.3.G Callaway County maintains procedures for removing the source of the discharge.

After locating the source, the pollutant and source will be removed.

The exact procedure will depend on the source and the circumstances, but generally the County will follow the procedure below:

1. If the illicit discharge is identified as being from a construction site that does not fall under the land disturbance permitting requirements, notify the builder and property owner that cleanup may be needed and further discharges will not be allowed. This includes improper handling of waste from remodeling projects that might not include land disturbance activities.
2. If the illicit discharge is identified as being from a construction site that does fall under the land disturbance permitting requirements, notify the property owner and their contractor that there is a potential violation of the land disturbance permit. Then follow the enforcement actions outlined within the Callaway County NPDES Phase 2 Regulations.
3. If the illicit discharge is identified as sewage from a public sanitary sewer, notify the Holts Summit Wastewater Superintendent so that a repair can be made. If the illicit discharge is identified as sewage from a private on-site wastewater treatment system, notify the Callaway County Health Department to assist with enforcement actions.
4. If the illicit discharge is identified as potable water that is likely from a water leak, notify the water district and work to address with them or the responsible property owner.
5. If the illicit discharge can be isolated to an illicit connection, notify the property owner that an illicit connection is in place and needs to be removed pursuant to the regulations or it will be deemed a violation and the abatement procedures will begin accordingly.
6. If the source of the illicit discharge can be determined and a responsible party identified, then notify the property owner that the illicit discharge has taken place and needs to be cleaned up or it will be deemed a violation and the abatement procedures will begin accordingly.
7. If the source of the illicit discharge cannot be determined and/or a responsible party identified, have County staff clean up the discharge to the extent practicable. If the source appears to be broader (such as yard chemical runoff), consider targeting an educational campaign to the subwatershed properties.
8. If the illicit discharge cannot be cleaned up by County staff, the following environmental cleaning company will be called in to perform the cleanup: Safety Kleen Systems 573-443-5412.

4.3.H In order to prevent further illicit discharge, Callaway County will identify priority areas for more frequent dry weather field screening.

Annually, the County will evaluate this priority area list and/or map and update as necessary to reflect changing priorities. The areas identified as “priority” and why they were designated as such will be documented in the annual MS4 Stormwater Management Program Report.

Examples of the types of areas that might be consider “priority” for dry weather field screening are:

- Areas with evidence of ongoing illicit discharges;
- Areas with a past history of illicit discharges;
- Certain land use influencing stormsewer/ proximity of potential pollutant sources;
- Areas of higher population density;
- Neighborhoods with onsite sewage systems;
- Areas with known litter or dumping issues;
- Areas with large or increased number of citizen complaints; and
- Industrial areas

- 4.3.I** Callaway County maintains written procedures for implementing the IDDE Program, including those components described within this section, to ensure program continuity and consistency.
- 4.3.J** Callaway County will conduct investigations in response to field screening discoveries, spills, or in response to complaints from the public, county staff, or adjacent MS4s. The County will:
1. Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare, or the environment.
 2. Investigate within five (5) business days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge which does not constitute a threat to human health, welfare or the environment.
 3. If illicit connections or illicit discharges are observed related to, discharging to, or discharging from, an adjacent MS4's storm sewer system, the County will notify the other MS4's Operator within 24 hours of discovery or as soon as practicable.

Adjacent MS4	Contact person(s)	Phone number/ email
City of Jefferson	Don Fontana, P.E.	573-634-6410/DFontana@jeffcitymo.org
City of Holts Summit	Mark Tate	573-896-5600/streets@holtssummit.org

- 4.3.K** Callaway County has procedures for appropriate enforcement, this may include the ability to collect cleanup and abatement costs, and actions to ensure that the County's illicit discharge regulations are being implemented. Section V of the Callaway County NPDES Phase 2 Regulations allows for these remedies.
- 4.3.L** Callaway County maintains a centralized system, to track dry weather field screenings, spills, incidents, and investigations. A form that is used for both dry weather field screening as well as field investigation of reported potential illicit discharges is included in Appendix B. Completed paper forms will also be stored within Appendix B.
- 4.3.M** Callaway County informs public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste, in conjunction with part 4.1 and part 4.6 of their permit (MCM #1 and MCM #6). County staff are trained on illicit discharge detection and elimination as well as proper waste management through their annual training. Businesses and the general public are informed about the hazards of illicit discharges and improper disposal of wastes through the public education mechanisms discussed under MCM #1.
- 4.3.Q** Callaway County maintains a training program for all maintenance staff, who, as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system. Sign in sheets that include the staff name, department, date, topic and training provider/method are included in Appendix G.
- Reviews of the training effectiveness will be considered after maintenance facility site inspections or after an illicit discharge incident occurs. If a certain department or facility did not perform the way they were trained, or if an issue arises that was not handled properly, the County will consider if the training is enough or is ineffective. The County will consider ways to survey or test staff to see if the training is effective. The outcomes of these reviews will be included in the Stormwater Management Program Annual Report.
- 4.3.R** Using adaptive management the County will review their IDDE Program, at minimum, annually and update implementation procedures as necessary. This data will be used to continuously evaluate the

effectiveness of each BMP and the implementation of each BMP. Any additional BMPs will be acknowledged in the Stormwater Management Program Annual Report.

Annual review of MCM 3			
Year being reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2021	6/22/22	Christina Luebbert, Paul Winkelmann	Stormwater mapping needs to be completed. Priority outfalls need to be identified. Dry weather field screening needs to be completed on all priority outfalls and 12% of the remaining outfalls.
2022			
2023			
2024			
2025			

4.4 MCM 4. Construction Site Stormwater Runoff Control

Callaway County is working to develop, implement, and enforce a program to reduce pollutants in any stormwater runoff to their MS4 from construction activities that result in land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre is included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

4.4.A Callaway County has regulations to require construction site runoff control BMPs at construction/land disturbance sites greater than or equal to one (1) acre or less than one acre if the construction activity is part of a larger common plan or development or sale that would disturb one acre or more within the applicable area. The regulations include sanctions which are designed to ensure compliance, to the extent allowable under State and local law.

The Callaway County NPDES Phase 2 Regulations include requirements for construction site runoff control. The construction site runoff control portion of the regulations is primarily found in Section III which can be found at the following link:

<https://callawaycounty.org/road-and-bridge/storm-water-regulations/>

4.4.B Callaway County reviews pre-construction plans.

- Evaluate threats to water quality
 - a) Soil erosion potential;
 - b) Site slope;
 - c) Project size and type;
 - d) Sensitivity of receiving waterbodies;
 - e) Discharge flow type (pipe or sheet flow);
 - f) Location of discharge point in relation to receiving water;

- g) Proximity of the site to receiving waterbodies; and
- h) Other factors relevant to the MS4 service area.

- A plan review checklist is used to ensure consistency and completeness (can be viewed at the following in Appendix C).
- Requirements for construction site operators to select, install, implement, and maintain appropriate stormwater control measures. This includes temporary BMPs throughout the life of the land disturbance, and permanent BMPs which remain on site as required by local codes and ordinances.
- Consideration of ways to minimize disturbed areas through actions such as, phased construction requirements, temporary seeding or sodding, or erosion mats to exposed areas.
- Requirements for construction site operators to control construction-site waste that may cause adverse impacts to water quality. (Trash, concrete wash-out, etc.). Section III-D of the Callaway County NPDES Phase 2 Regulations requires the control of other construction site pollutants in addition to sediment.

4.4.C Callaway County has established authority for site inspections and enforcement of control measures. To the extent allowable by state, federal, and local law, the County has implemented procedures for inspecting construction/land disturbance projects.

The construction site runoff control program:

- Sites are not prioritized for inspection. There are very few construction activities that occur within the County's regulated MS4 area. The County's stormwater consulting engineer will provide oversight inspection of ALL active construction sites that fall under the applicability of the construction site runoff control regulations within the urbanized area.
- Construction site inspections assess compliance with the construction site storm water runoff control regulations, and other applicable regulations.
- The inspections evaluate any structure that functions to prevent pollution of stormwater or to remove pollutants from stormwater and use enforcement polices to require BMPs are implemented and effective.
- Final inspection, upon completion of the land disturbance and prior to final approval of construction project ensures all disturbed areas have been stabilized and that all temporary erosion and sediment control measures are removed.
- The inspections conducted by the County stormwater consulting engineer are documented on paper inspection forms. Completed inspection forms are kept in Appendix D of this plan. The inspector will check on the self-inspections which are conducted by the construction site operators.
- The land disturbance inspection checklist is included in Appendix D of this plan.

4.4.D The construction site runoff control program includes an established, escalating enforcement policy that clearly describes the action to be taken for violations.

The program has written procedures to ensure compliance with the construction site runoff control regulations. Section III-F primarily addresses the escalating enforcement policy and possible sanctions/enforcement mechanisms. The link for the Callaway County NPDES Phase 2 Regulations is:

<https://callawaycounty.org/road-and-bridge/storm-water-regulations/>

4.4.E Callaway County's current stormwater regulations do not specifically address the requirement for construction site operator to conduct self-inspections in accordance with their MDNR Land Disturbance permit requirements. The regulations will be updated in the first permit year to more specifically state this requirement. Operators shall utilize their own inspection checklist.

Checklists used for these inspections conducted by construction site operators are to be retained on-site or be readily available as required by their MDNR Land Disturbance permit. The County stormwater consulting engineer will review these self-inspections during their monthly oversight inspections.

- 4.4.F** Callaway County maintains an inventory of active public and private land disturbance sites, as defined in Section 4.4 of their MS4 permit. This is supplemented with records such as a plan review documentation and email correspondence. The log of active construction sites is kept in Appendix D of this plan and is available to MDNR upon request.

The inventory contains:

- Relevant contact information for each project (e.g., tracking number, name, address, phone, etc.);
- Size of the project/ area of disturbance;

- 4.4.G** Callaway County tracks their oversight inspections by keeping paper copies of completed inspections in Appendix D of this plan. Callaway County will make these inspection records available to MDNR upon request.

The tracking contains at a minimum:

- Inspection dates and time;
- Inspector name;
- Inspection findings; and,
- Follow up actions and dates, including corrective actions and enforcement actions.

- 4.4.H** Callaway County will review the Stormwater Management Program including regulations, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with the MS4 permit requirements. Any changes necessary to be in compliance with this permit will be completed within the first year following this permit issuance.

The inventory of active site permits will be updated as new projects are reviewed and projects are completed.

- 4.4.I** N/A

- 4.4.J** The Stormwater Management Program includes procedures for the County to receive and consider information submitted by the public about land disturbance sites. This is done in combination with Section 4.2.D of this plan. Citizens can call, email or write a letter to the County Highway Administrator with any concerns or questions about land disturbance sites. Any phone calls, emails or letters received by the County Highway Administrator will be passed along to the County Stormwater Consulting Engineer and documented in the Public Inquiries Log in Appendix A of this plan.

- 4.4.K** Callaway County is contracting out their inspection and plan review work to a registered professional engineer with over two decades working in the stormwater industry and who regularly provides training to other MS4's on how to complete construction site runoff control inspections and plan review. The County's Stormwater Consulting Engineer also attends regular training on a variety of stormwater topics through her regular professional development. This training will be documented and reported on in the annual report.

- 4.4.L** Callaway County is contracting out their inspection and enforcement to a registered professional engineer the wrote the documents outlining the inspection and enforcement procedures. However, the procedures will be reviewed with staff as part of their annual training.

4.4.M Using adaptive management, Callaway County will review, at minimum annually, their Construction Site Stormwater Runoff Control Program and evaluate the regulations, review procedures, inspection procedures, enforcement procedures, receipt of public information procedures, and effectiveness of training procedures to ensure compliance with these requirements and determine if changes are needed.

Annual review of MCM 4			
Year being reviewed	Date of review	Reviewer(s)	Were changes made and noted?
2021	6/22/22	Christina Luebbert, Paul Winkelmann	At this time, it doesn't appear that the County has any active construction sites within the urbanized area. This will be monitored. The County may need to develop a simple land disturbance permit application form for better tracking if a project that falls under the regulations comes up.
2022			
2023			
2024			
2025			

This annual review will include but is not limited to the following.

- Evaluating the most common violations, how the violations are handled, how many are escalated;
- If the education program can assist in reducing violations;
- Determining if the site plans match the sites when violations arise or if additional items need to be evaluated at plan review;
- Assessing public complaints being addressed in a timely manner; and
- Evaluating if the inspections thorough and consistent across different sites.

4.5 MCM 5. Post-Construction Stormwater Management in New Development and Redevelopment

Callaway County is working to develop, implement, and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects that disturb equal to and greater than one acre, including projects less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more and that discharge into the regulated MS4. The program ensures that controls are in place that have been designed and implemented to prevent or minimize water quality impacts

4.5.A Callaway County has regulations to address post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law for sites equal to or greater than one acre including projects less than one acre that are part of a larger common plan of development or sale. The Callaway County NPDES Phase 2 Regulations include post-construction stormwater

management requirements which are primarily found in Section IV. The regulations can be found at the following link:

<https://callawaycounty.org/road-and-bridge/storm-water-regulations/>

The current stormwater regulations require natural stream buffers and encourage low impact development practices. However, these regulations will be reviewed and updated within the first two permit years to make the requirements for treating the water quality storm more clear and reference necessary design guidance documents.

These are outlined in more detail in Section 4.5.B below.

4.5.B Callaway County has developed a strategy to minimize water quality impacts. This includes a combination of structural and/or non-structural controls (BMPs) appropriate for their community.

1. Structural controls include but are not limited to; extended detention basins, grass swales, bio-retention, permeable surfaces, sand filter basins, stormwater planters, proprietary BMPs.

The regulatory mechanism for structural post-construction controls, or water quality facilities, includes:

Adoption or development technical performance and/or design standards to control post-construction stormwater discharges.

The County needs to update their NPDES Phase 2 Stormwater Regulations to adopt stormwater discharge design standards that more comprehensively consider parameters such as; site discharge volume, rate, duration, and frequency for new development and redevelopment sites with the intent to minimize the impact of stormwater runoff on water quality.

The revised regulations will include post-construction stormwater standards for designing, installing, implementing, and maintaining stormwater control measures which may include, but are not limited to BMPs that; infiltrate, evapo-transpire, harvest, detain, retain, and/or reuse stormwater.

Additionally, the regulations will likely reference design standards in the Kansas County American Public Works Association (APWA) Sections 5100 Erosion and Sediment Control (September 2010) and Section 5600 – Storm Drainage Systems and Facilities (February 2011) and the Mid-America Regional Council (MARC) Manual of Best Management Practices for Stormwater Quality (Sections 6, 7 and 8; Appendices A and B).

KC-APWA Section 5600:

<http://kcmetro.apwa.net/content/chapters/kcmetro.apwa.net/file/Specifications/APWA5600.pdf>

MARC BMP Manual:

http://kcmetro.apwa.net/content/chapters/kcmetro.apwa.net/file/Specifications/BMPManual_Oct2012.pdf

2. Non-structural controls include but are not limited to; stream buffers, no mow zones, preservation of open spaces, tree preservation, impervious cover reduction, land use planning, and low impact development.

The regulations for non-structural Post-Construction controls includes:

- *Stream Buffer Requirements*

Callaway County has NPDES Phase 2 Regulations. Section IV-C of these regulations highlights the use of stream buffers as a filtration, infiltration and stabilization Best Management Practice (BMP). The Callaway County NPDES Phase 2 Regulations can be viewed at the following link:

<https://callawaycounty.org/road-and-bridge/storm-water-regulations/>

- *Wetland Protection*

The stream buffer requirements (see above) provide a de facto wetland protection as many wetlands are located near stream corridors. The County cooperates with the Army Corps of Engineers regulation of jurisdictional wetlands.

The site plan requirements set forth in the APWA 5600 plan requirements standards requires the identification of wetlands on any proposed development plans. The revised regulations will likely reference these requirements. Specifically, Section 5609.7 states that plans must show man-made and natural topographical features which would include wetlands:

http://kcmetro.apwa.net/Content/Chapters/kcmetro.apwa.net/File/Specifications%2FAPWA%205600_16FEB2011%20minor%20correction%20pg%2067.pdf

4.5.C Pre-construction plan review is conducted by the County Stormwater Consulting Engineer to assess site characteristics at the beginning of the construction site design phase to ensure adequate planning for stormwater program compliance.

The structural or non-structural controls chosen are intended to protect sensitive areas, minimize the creation of stormwater pollution, and effectively reduce stormwater pollution. This is achieved by reasonably mimicking pre-construction runoff conditions on all affected new development projects. The plan review process uses a checklist. This is the same checklist utilized in the plan review for MCM #4. The plan review process evaluates the usage of both non-structural and structural BMPs. The plan review checklist is included in Appendix C of this plan.

4.5.D Callaway County will need to edit their NPDES Phase 2 regulations to better ensure adequate long-term operation and maintenance (O&M) of the selected BMPs. The proposed edits would include operation and maintenance agreements between the County and other parties such as post-development landowners. The Callaway County NPDES Phase 2 Regulations can be found at the following link:

<https://callawaycounty.org/road-and-bridge/storm-water-regulations/>

Additionally, the County will require the owner of any development that utilizes structural Best Management Practices to execute a “Covenant to Maintain Stormwater Management Systems”. This

document is recorded at the Callaway County Courthouse and runs with the land. It outlines the inspection and maintenance responsibilities of the owner and outlines the consequences of failing to maintain the stormwater management systems. The template for this covenant is included as Appendix E.

4.5.E Callaway County will inspect each water quality structural and non-structural water post-construction BMP according to the following at minimum:

- A minimum of one (1) inspection will be conducted during construction, and one (1) inspection before the site is finalized, to verify water quality facilities are built as designed and any applicable boundaries or practices for non-structural BMPs are being observed. This may be conducted in combination with MCM 4 inspections. The County Stormwater Consulting Engineer (as the County representative) will have access to the approved plans to ensure proper installation (they are given paper copies of the plans to take to the field).
- A minimum of once in the first three years after the installation by the County Stormwater Consulting Engineer.
- Annually by the owner or operator of the post-construction BMP as outlined in the BMP Maintenance Agreement.
- The County Stormwater Consulting Engineer will inspect a minimum of 60% of all water quality post-construction BMPs within the five-year permit cycle. This will include installations with ongoing or open enforcement issues.

All inspections are documented on a written form (in Appendix F) with sufficient photographs attached. The document outlines what the inspector looks for based on the type of BMP being inspected. A summary of these inspections will be included in the annual report.

4.5.F Callaway County maintains a plan designed to ensure compliance with the MS4's post-construction water quality regulations. This plan includes escalating enforcement mechanisms the County will use to ensure compliance.

Callaway County has the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance. Section V of the Callaway County NPDES Phase 2 Regulations primarily addresses the abatement of violations. The regulations can be viewed at the following link:

<https://callawaycounty.org/road-and-bridge/storm-water-regulations/>

If violations are found related to the ongoing Operations and Maintenance (O&M) of a post-construction BMP, the responsible parties listed in the maintenance covenant will be notified. Depending on the degree and duration of the violation, the effect of the violation on the receiving water, the compliance history of the owner/operator and the cooperation of the owner/operator, the inspector will determine the level of enforcement required in consult with the County Highway Administrator.

4.5.G Enforcement actions will be timely in order to ensure the actions are effective. County staff will begin enforcement actions within thirty (30) days of discovering a violation. Minor violations such as the need to have a facility mowed, litter or sediment removed will typically be given 30 days to complete the maintenance required. More significant maintenance issues (clogged or broken outlet structures, varmint hole damage, erosion damage) may be given longer time frames based on the type of work needed and weather dependence.

The County maintains the following possible sanctions for enforcement of the requirements on long-term stormwater BMPs:

1. Education regarding the BMP and verbal warnings;
2. Written warnings or notice of violation (this includes email notification);
3. Property lien through violation abatement; and
4. Fines.

4.5.H Callaway County maintains an inventory tracking the water quality post-construction BMPs. This inventory is maintained on paper in Appendix F of this plan and is updated as new BMPs are constructed.

The inventory contains:

- Relevant contact information for each project (e.g., tracking number, name, address, phone, etc.);
- The type of post-construction BMP;
- Applicable operations and maintenance documents;
- Date the County approved the construction site plan; and,
- If the water quality facility is owned or operated by the County, the tracking will also include any maintenance, such as sediment clean-out or replanting.

4.5.I Callaway County also tracks the post-construction BMP inspections. The inspection records are paper inspection forms stored in Appendix F and may be supplemented with written or email correspondence. The County will make these inventories available to the Department upon request.

The tracking contains at a minimum:

- Inspection dates and time;
- Inspector name;
- Inspection findings; and,
- Follow up actions and dates, including corrective actions and enforcement actions.

4.5.J The County will evaluate the NPDES Phase 2 regulations, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with the permit requirements and determine if changes are needed. Any changes necessary to be in compliance with the MS4 permit will be completed within the first two (2) years of permit issuance.

The inventory of water quality facilities is updated as new facilities are added and projects are completed.

4.5.K N/A

4.5.L Callaway County is contracting out their inspection and enforcement to a registered professional engineer with over 25 years' experience in post-construction stormwater management. The County Stormwater Consulting Engineer will seek out continuing education on post-construction BMPs. This may include Green Infrastructure training, or specific operation of proprietary post-construction BMPs. The County Stormwater Consulting Engineer will document this and provide a summary of any training received as part of the annual report.

4.5.M Using adaptive management, Callaway County will review, at minimum annually, their Post-Construction Site Stormwater Management in New Development and Redevelopment Program and evaluate effectiveness of the overall program and determine if changes are needed.

Annual review of MCM 5			
Year being reviewed	Date of review	Reviewer(s)	Were changes made and noted above?
2021	6/22/22	Christina Luebbert, Paul Winkelmann	Need to review the stormwater regulations and update as necessary as related to the MCM 5 permit requirements. Also need to look around within the urbanized area and determine if any post-construction BMPs exist.
2022			
2023			
2024			
2025			

This annual review may include but is not limited to the following.

- Reviewing the number and types of developments;
- How many BMPs were installed/inspected;
- The amount of watershed area being treated;
- The types of violations found and how frequently; and
- Evaluating how education could improve the effectiveness of the program.

4.6. MCM 6. Pollution Prevention/Good Housekeeping for Municipal Operations

Callaway County is working to develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from County maintenance operations within the MS4 area.

4.6.A The County will maintain and utilize an employee training program for MS4 County maintenance staff. The training will be given, at a minimum, annually to all MS4 staff who work with material handling, at MS4 owned or operated vehicle/equipment maintenance areas, storage yards, and material storage facilities. This may be broken up into staff units, or by applicable topics. Sign-In sheets with the names and department of the attendees, the topics covered, and the training provider or other method of training will be kept in Appendix G and made available to MDNR upon request.

4.6.B The training will be used to prevent and reduce stormwater pollution. The training will cover a minimum of the following topics/ activities:

1. Vehicle and equipment washing
2. Fluid disposal and spills
3. Fleet, equipment, and building maintenance
4. Park and open space maintenance procedures (including fertilizer, herbicide, pesticide application)
5. New construction, road maintenance and land disturbances
6. Stormwater system maintenance
7. MS4 operated salt and de-icing operations
8. Fueling
9. Solid waste disposal

10. Street sweeper operations

11. Illicit discharges

The topics covered each year and the number of staff trained in each department will be documented in the annual report.

4.6.C Callaway County has a policy and procedure for employee training. It outlines how employees will receive initial training, ongoing public education, training related to specific standard operating procedures, and training on specialized tasks (such as inspection and enforcement for selected staff).

The annual report will contain a summary of training received by County employees each year. Copies of Sign-In sheets with the names and department of the attendees, the topics covered, and the training provider or other method of training will be kept in Appendix G of this plan and made available to MDNR upon request.

The County maintains materials to use in the training program. Primarily these are the Good Housekeeping Standard Operating Procedures (SOPs) that can be found in Appendix H. Other educational materials from the EPA, MDNR, MARC and other organizations will be utilized as needed.

The training for employees covers the various sources of pollutants that their municipal operations can potentially discharge. The training also discusses the staff's role in illicit discharge detection and elimination (crossing over into MCM #3). It also covers construction site runoff control from County projects (crossing over into MCM #4). All applicable training topics are covered once annually. They are not typically broken up seasonally.

4.6.D Callaway County will maintain a list of all County operations/facilities that are impacted by this operation and maintenance program.

FACILITY	ADDRESS
Callaway County Road and Bridge Maintenance Facility (Fulton)	5901 County Road 302 Fulton, MO 65251
Callaway County Road and Bridge Maintenance Facility (New Bloomfield)	East side of Elm Avenue (between Mulberry Street and Cedar Lane) New Bloomfield, MO 65063

4.6.E Callaway County has no facilities that it owns or operates which are subject to NPDES permits for discharges of stormwater associated with industrial activity.

4.6.F Callaway County maintains controls for reducing or eliminating the discharge of floatables and pollutants from County facilities listed in Section 4.6.D and 4.6.E.

County staff follow Standard Operating Procedures (included in Appendix H). The SOPs that include information about the proper handling of floatables and other pollutants from municipal facilities include:

- Streets, Roads, Highways and Parking Lots:

Salt/Sand Storage and Application SOP

Metrics related to these County operations will be tracked and reported on annually. Deicing materials (salt, cinders, sand, etc.) usage will be traced based on the amount purchased/acquired each year.

- Maintenance and Storage Yards/Shops & Waste Transfer Stations:

Good Housekeeping (General SOP)

Building Maintenance SOP

Vehicle/Equipment Storage SOP

Vehicle/Equipment Washing SOP

Salt/Sand Storage and Application SOP

Weed and Pest Control SOP

Mowing and Irrigation SOP

- Inspection and Maintenance of the MS4:

Catch Basin/Storm Drain System/Outfall Repair SOP

Catch Basin/Inlet Cleaning SOP

Erosion and Sediment Control SOP

Illicit Discharge Detection and Elimination SOP

- Paints, Solvents, Petroleum Products and Petroleum Waste Products:

Painting SOP

Parts Cleaning and Storage SOP

Petroleum and Chemical Handling, Storage and Disposal SOP

Fueling SOP

- Spill Prevention, Control and Management:

Spill Prevention and Control SOP

Additionally, each County maintenance facility will have an individual SWPPP that discusses the pollutant sources at each facility such as materials used and stored on-site. Any structural controls that are utilized at each facility to reduce or prevent pollutants from entering waters of the state are also listed in the SWPPPs. Each SWPPP also has a map of these BMPs. The locations of spill kits are also listed in the SWPPPs. Any containment systems are constructed of materials compatible with the substances contained and are designed to prevent the contamination of groundwater. These containments systems will be outlined in the individual SWPPPs. County maintenance facilities are inspected annually for stormwater issues as discussed in Section 4.6.I.

4.6.G Callaway County has procedures for proper disposal of waste removed from the MS4 structures and areas of jurisdiction. All wastes are disposed of in dumpsters located by the Callaway County Road and Bridge Fulton Maintenance Facility. Litter from the rights-of-way and other MS4 maintenance debris are placed in dumpsters.

4.6.H Callaway County maintains and utilizes standard operating procedures for the washing of all county maintenance vehicles and equipment. A copy of the SOPs are included in Appendix H. The County Road and Bridge Department washes vehicles at an outdoor wash bay located at the Fulton Maintenance Facility. This area runs to a grit sump pit that then discharges to a wastewater treatment lagoon. This assures that wash/rinse waters that contain pollutants such as salt, oils, grease, sediment, grass clippings, lawn chemicals, or pesticides will not be discharged to waters of the state untreated.

4.6.I Callaway County maintains written explanation of the controls, procedures, inspection schedules, and

explanation of tracking of these controls. Tracking will be done by retaining inspection reports or checklists.

Individual Stormwater Pollution Prevention Plans (SWPPP) will be developed for all applicable MS4 maintenance facilities and are supplemented with Standard Operating Procedures for many of the most common county maintenance activities.

Annually, the County will evaluate the results, controls, and inspection procedures to ensure compliance with these requirements and determine if changes are needed. This evaluation will also aid in finding priority areas or pollutants in relation to MCM 3, or adding more education in relation to MCM 1.

County Maintenance Facilities listed in Section 4.6.D will be inspected at least annually. County Maintenance Facility Inspection Forms with the date of the review, location inspected, discussion of any issues found, discussion of any changes made or proposed, and discussion of any follow up needed will be kept in Appendix I of this plan and made available to MDNR upon request.

- 4.6.J** Callaway County maintains procedures to determine if there are impacts to water quality for new flood management projects, if applicable. Any flood management projects will consider the protection of water quality in the standards that are used to plan, design, build, and maintain stormwater infrastructure. Flood management projects are those projects developed or designed to reduce flooding.

New flood management projects completed by private developers must follow the regulations which requires the treatment of the water quality storm (aka “first flush”). The County’s Stormwater Consultant will determine whether or not the development plans submitted accomplish this goal. Callaway County rarely completes new flood management projects. However, in the event that one is scheduled on the capital projects list, the County Highway Administrator will require the design professional preparing the plans to determine if the water quality storm has been effectively treated.

The County does not currently have any flood control projects. The annual report will document if any flood management projects have been reviewed and, if so, where they are located and how water quality impacts were taken into account.

- 4.6.K** Callaway County will evaluate the current Stormwater Management Program including training, inspection procedures, and other municipal operation procedures to ensure compliance with the MS4 permit requirements. Any changes necessary to be in compliance with the permit will be completed within one (1) year of this permit issuance.

4.6.L N/A

- 4.6.M** Using adaptive management, Callaway County will review their County Maintenance Program, at minimum, annually and update implementation procedures as necessary.

Annual review of MCM 6			
Year being reviewed	Date of review	Reviewer(s)	Were changes made and noted above?
2021	6/22/22	Christina Luebbert, Paul Winkelmann	County maintenance staff will be trained along with the City of Holts Summit staff in July 2022. A SWPPP for the County Maintenance Facilities located in both Fulton and New Bloomfield will be completed by the end of 2022. An inspection of these facilities will be completed by the end of 2022. SOPs developed for other MS4s will be reviewed and revised as needed to be utilized by Callaway County.
2022			
2023			
2024			
2025			

5.3 MS4 Stormwater Management Program Report

5.3.A A report to the Department on the status of the County’s program is due annually on or before February 28th. This report will cover the previous year from January 1st to December 31st. The report will be submitted through the eDMR system on the Department approved, MS4 Stormwater Management Program Report form.

Who has access to the eDMR system?	
NAME	Role in the eDMR system
Christina Luebbert, P.E. – Stormwater Consultant	Organization official (as delegated by County Highway Administrator Paul Winkelmann)

Annual Report Submittal		
Permit Year	Date of Submittal	Submitted by whom?
2021	6/23/2022	Christina Luebbert, P.E.
2022		
2023		
2024		

2025		
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Appendix A – Public Inquiries Log

Appendix B – Dry Weather Field Screening/IDDE Investigation Form
(Place completed forms behind blank form)

Appendix C – Plan Review Checklist
(Place documentation of plan reviews behind blank form)

Appendix D - Log of Active Construction Sites
Land Disturbance Inspection Form
(Place completed forms behind blank form)

Appendix E – Template for Stormwater Management/BMP Facilities Covenant

Appendix F – Post-Construction Stormwater BMP Inventory
Post-Construction BMP Inspection Form
(Place completed forms behind blank form)

Appendix G – Staff Training Records
(Place completed sign-in sheets behind blank form)

Appendix H – Good Housekeeping in Municipal Operations Standard Operating Procedures (SOPs)

Appendix I – Municipal Facility Inspection Form
(Place completed forms behind blank form)