

City of Jackson, Missouri

## **STORMWATER MANAGEMENT PLAN**

Missouri State Operating Permit: MOR0C013

Revised October 2022

101 Court Street  
Jackson, MO 63755

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## Appendix

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# Introduction

## Purpose

All cities with a population of 10,000 to 100,000 must obtain a permit for stormwater discharges from Regulated Small Municipal Separate Storm Sewer Systems (MS4). The permit follows the Stormwater Phase II Final Rule developed by the Environmental Protection Agency (EPA) and enforced by the Missouri Department of Natural Resources (MDNR) under regulation 10 CSR 20-6.200. The MS4 permit grants authority to a city to discharge stormwater according to the Missouri Clean Water Law and the National Pollutant Discharge Elimination System (NPDES), and it mandates certain planning, regulating, and inspection activities that administrators of the jurisdiction must undertake to comply with the permit.

The City of Jackson Missouri has a population of over 10,000 according to the 2010 Census; it is therefore a Missouri "regulated MS4" and must obtain a MS4 General Operating Permit. The City has developed this Stormwater Management Plan (SWMP) as part of the permitting process.

The City currently operates under the General Operating Permit MOR04C013 issued on October 1, 2021 with an expiration date of September 30, 2026. A copy of this permit can be found at the following link:

<http://www.jacksonmo.org//FileStream.aspx?FileID=2232>

The City will also create and submit annual reports to the Missouri Department of Natural Resources (MDNR) on activities regarding stormwater and progress made toward meeting the goals of the SWMP. The annual reports will be appended to the plan as [Appendix 7](#).

## Minimum Control Measures

According to the Phase II Rule, small MS4 owners/operators must reduce pollutants in stormwater to the maximum extent practicable to protect water quality. This SWMP summarizes the City of Jackson's intentions to reduce the amount of pollution in its stormwater runoff by addressing the six minimum control measures listed on the permit. These categories are as follows:

1. Public Education and Outreach on Stormwater Impacts
2. Public Involvement/Participation in Program Development
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

## Iterative Process

The City will adopt this SWMP and will reevaluate its effectiveness during annual reports. Over time, new solutions may be necessary to better control pollution in stormwater. Additionally, some practices that are effective now may not be effective in the future. This SWMP is a foundation on which new and innovative ideas and solutions can be developed in the years to come to protect the water quality of our local streams.

## City Description

The City of Jackson is in the foothills of the Ozark Plateau of southeast Missouri, just north of what is known as the "Bootheel" of the state. Jackson is the county seat of Cape Girardeau County. Most of the stormwater runoff flows

to Hubble Creek, while a small portion from the northwest corner of town flows to Cane Creek, and a small portion on the east side of town flows to Ramsey Branch. All stormwater ultimately flows to the Mississippi River.

Although the City of Jackson is mostly residential, some industrial areas are within the City. Major industrial sites are listed below.

- Coca Cola Bottling Company – local soft drink bottling plant
- American Railcar Incorporated – railcar manufacturing facility
- Signature Packaging Incorporated – cardboard box manufacturing
- Midwest Sterilization Incorporated – bulk sterilization services
- Ceramo Pottery – clay flowerpot manufacturing
- Lenco Incorporated – small batch machining and assembly
- Rubbermaid Incorporated – wire shelving manufacturing plant
- MFA Agri-Services – livestock feed manufacturing and fertilizer services
- CO-OP Service Center – livestock feed manufacturing and fertilizer services
- Straightway Farm Services – livestock feed manufacturing and sales
- Mondi Warehouse – flexible packing company
- SEMO Readymix – readymix concrete plant
- Kasten Clay Products – clay brick manufacturing

The City encompasses 11.2 square miles, or about 7,135 acres. An extensive stormwater collection system serves the City including detention basins, storm sewers, and open channels.

## **MS4 Coordinator**

The position of City Engineer assumes the role and responsibility of the Stormwater Coordinator for the City of Jackson. The MS4 Coordinator's contact information is listed below.

Anna Bergmark, P.E.  
City Engineer | City of Jackson  
101 Court St. | Jackson, MO 63755  
573-243-2300 | [abergmark@jacksonmo.org](mailto:abergmark@jacksonmo.org)

## **Permit Type**

The City of Jackson is under the Comprehensive permit. This SWMP was written in conformance with the State Comprehensive General Permit; should a situation arise where the SWMP and the permit conflict, the stricter of the two apply.

The City of Jackson is Group B: Traditional Small MS4s that serve a population of at least 10,000 but less than 40,000.

## **SWMP Format**

The remainder of this SWMP includes both excerpts from the City's General Operating Permit MOR04C013 as well as language on how the City is meeting these requirements. Black text in Times New Roman font is text directly from the Permit. Not all referenced tables from the Permit have been included. Please refer to the Permit in its entirety for all the tables. Blue text in Arial font is the City's method for meeting the requirements in the General Operating Permit.

## Minimum Control Measure #1: Public Education and Outreach on Stormwater Impacts

The MS4 Operator shall implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

### Target Audiences

**4.1.A** The MS4 Operator shall target specific audiences who are likely to have significant stormwater impacts.

1. Traditional MS4s (cities and counties) shall address the residents being served by the MS4;
2. Non-traditional MS4s shall address the community served by the MS4 as listed below:
  - a) Universities shall target the faculty, other staff, and students;
  - b) Military bases shall target military personnel (and dependents), and employees (including contractors).
  - c) Prison complexes or other multi-building complexes shall target staff and applicable contractors.
3. Additional audiences within the MS4 service area (such as, but not limited to, those listed in **Table I**) shall be addressed as listed below:
  - Group A: No requirement for additional audiences
  - Group B: A minimum of one (1) additional audiences**
  - Group C: A minimum of two (2) additional audiences

As a traditional Group B MS4 the City of Jackson is required to target two audiences: Residents and an additional group that is appropriate for the MS4 area. For the purpose of MCM 1, the City of Jackson will focus its public outreach and education on residents and contractors/developers. Businesses and other groups are addressed in MCM 2-5. Other efforts are planned such as educational fliers associated with specific permits (e.g. swimming pool water disposal with building permits for a pool) and activities with local area schools (e.g. presentations to classes and MS4 related artwork for "Scoop the Poop" signs). These activities however will not have measurable goals at this time.

### Target Pollutants

**4.1.B** The MS4 Operator shall target specific pollutant(s) in the permittee's education program (such as, but not limited to, those listed in Table II).

Each MS4 shall have a minimum of one target pollutant for each target audience from Section 4.1.A of this permit. The same pollutant may be used for more than one target audience, the target pollutant(s) may change annually as needed.

See below BMPs.

### Educational Resources

**4.1.C** 4.1.C The MS4 Operator must utilize appropriate educational resources to be used as BMPs (materials, events, activities, etc.) in conjunction with the selected pollutants for the selected target audiences.

The message delivered by these BMPs needs to be applicable to the target audience and relate to the target pollution. The distribution of the BMPs needs to be effective, and when possible associated with the target audience or pollutant (such as a swimming pool water disposal flyer when applying for a swimming pool permit). BMPs which are ongoing throughout the year or permit cycle may be counted as one annual BMP. The permittees SWMP shall explain how each BMP relates to the target pollutant and target audience. The MS4 Operator 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 shall be reflected in the SWMP and explained in the MS4 Stormwater Management Program Report.

1. Using Table III, over the permit term the MS4 Operator shall implement a minimum of the following, including the tracking and adaptive management processes:

Group A: Each permit cycle; two (2) education and outreach BMPs from Table III.

**Group B: Each permit cycle; four (4) education and outreach BMPs from Table III.**

Group C: Each permit cycle; five (5) education and outreach BMPs from Table III.

## List of BMPs

### BMP No. 1.1

**Target Audience:** Residents

**Target Pollutant:** Grass clippings and leaf litter

**Reasoning:** Public participation in pollution prevention such as reducing excess fertilizer and pesticides is important to protect our streams. Education is an important tool to gain public participation.

**Actions Taken:** Educational material regarding yard and lawn care will be shared on the City's social media page once per year and included with utility bills once per year. The City's Walk Jackson program will also focus on this topic at a minimum of once per summer. See **Appendix 1-1** for an example of the materials as well as information on the Walk Jackson Program.

**Measurable Goals:** Reduction in the volume of materials removed from the inlets and water quality facilities each year by the Street Department. Increases in the number of people "reached" and the number of "engagements" on social media posts.

**Responsible Person:** Street Foreman and MS4 Coordinator

**Iterative Process Evaluation:** Each year the MS4 Coordinator will work with the Street Foreman to total the amount of volume/truck loads removed from the inlets and water quality facilities each year and taken to the landfill each year. After two years to obtain a base number, the City should see a reduction in these loads if the education is effective. The MS4 Coordinator will also document the number of people "reached" and the number of people who "engaged" on the social media posts.

**Schedule:** Educational materials on lawn care and glass clippings are posted in March and September. Walk Jackson occurs throughout the summer.

### BMP No. 1.2

**Target Audience:** General Contractors and Developers

**Target Pollutant:** Sediment/mud

**Reasoning:** Each construction site is varied and continued education on how to prevent erosion and control sediment in various conditions will reduce the level of sediment in our streams.

**Action Taken:** Informational material handed out with each permit issued and yearly license renewals, quarterly open house meetings with the MS4 Coordinator. See **Appendix 1-2** for an example. The City is currently working on one specific to the City of Jackson.

**Measurable Goal:** Reduction in the number of violations, failed inspections, and citizen complaints.

**Responsible Person:** MS4 Coordinator and Building Inspectors.

**Iterative Process Evaluation:** All inspections and citizen complaints are entered into the City's iWorq system. Building Inspectors will include an erosion and sediment control inspection during each individual building inspection. No building inspections will be approved without adequate erosion and sediment control. The MS4 Coordinator is currently serving as the MS4 inspector for larger developments and subdivisions. These inspections are also entered into iWorq and can be tracked. The first two years will be used as a baseline and subsequent following years should show a decrease in violations, failed inspections, and citizen complaints.

**Schedule:** On-going with each permit issued and yearly license renewal.

## Public Activities to Improve Water Quality

**4.1.D** The MS4 Operator must 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) must have an effort to impact stormwater runoff by improving water quality.

Group A: Each permit cycle; one (1) involvement BMP from Table IV.

**Group B: Each permit cycle; two (2) involvement BMPs from Table IV.**

Group C: Each permit cycle; three (3) involvement BMPs from Table IV.

Co-permittees: Each permit cycle; one (1) involvement BMP in the boundaries of each co-permit.

**Table IV Involvement BMPs**

BMPs	Measurable goals (The quantity or frequency required to count as a full BMP)	Tracking & Adaptive Management
Stream/lake or Watershed clean-up events; Litter clean-up events such as Missouri Stream Team, Adopt-A-Spot, Adopt-A-Street, Adopt-A-Stream;	To be considered an event, the land area cleaned must be at minimum 2 acres, or 400 yards of stream/ streambank/ watershed, or 2 miles of road side. (These may be combined such as 1 acre of land and 200 yards of stream.)	Track the area or distance cleaned (by acre, yard or lane miles), the amount of waste removed (by tonnage, cubic yard, or Stream Team bag count) and the attendance. Use the waste measurements to determine if there are priority areas for litter entering stormwater, or areas for illegal dumping.
Habitat improvement; Tree planting; Invasive vegetation removal; Stream restoration.	To be considered an event, the project must be a minimum of .5 acres or 25 yards. These may be a combination. This may take place in streams, parks, areas adjacent to public waterways, and/or other green space.	Track the location(s) along with the amount planted or removed, or miles improved or restored. Analyzing the areas improved upon, the MS4 Operator shall see if there are opportunities to join the improve areas, or work on a watershed basis.
Volunteer water quality monitoring;	To be considered an event, the monitoring must be conducted at minimum once a year.	Record the sites for the volunteers, what parameters were measured/monitored, and the dates of the monitoring.
Hold events to train residents, or work a project for homeowner associations (HOAs), or other public groups. The event or training must cover stormwater related topics such as: building rain barrels; Fertilizer application training; Rain garden/ bio retention creation or maintenance; How to recognize illicit discharge activities and communicate	Provide one project or training at minimum annually.	Record the attendance, the topic covered, and any training materials distributed. Use these numbers and interactions during the event to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience.

observations to appropriate MS4 staff.		
School, public event, etc. educational display/booth; Provide information or displays that work to improve public understanding of issues related to water quality.	Provide one booth or display at minimum annually. The booth or display must be staffed by staff of the MS4 at minimum 50% of the time the event is open to the public.	Record the number of interactions, the overall attendance, or the number of hours the event was staffed. Record the topic covered, and any educational materials distributed. Use these numbers and interactions during the event to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience.
Stormwater related speaker series;	Provide a minimum of two sessions a year. These may be different speakers and/or audiences.	Record the attendance, the topic covered, and any training materials distributed. Use these numbers and interactions during the event to determine if the project or training covered a topic of interest and/or a topic that could be brought to a different or wider audience.
<b>Ongoing yard waste collection, designated yard waste collection area, household hazardous waste collection, or street sweeping program.</b>	<b>Provide the service as an annual occurrence or at readily accessible location. For street sweeping, this shall be conducted at minimum twice a year.</b>	<b>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.</b>
MS4 area wide stormwater survey.	A series of public survey to establish a baseline in the first year of the permit and then a minimum of annually throughout the permit cycle.	Use the same or similar questions to evaluate BMPs and/or full program effectiveness. Surveys can be done with utility bills, online, social media, or a combination. All participation should be tracked.

**BMP No. 1.4**

**Public Involvement Activity:** Yard waste collection week at curb-side.

**Measurable Goal:** Twice per month year-round, first and third weeks of each month.

**Responsible Person:** Foreman of Sanitation Department.

**Tracking and Adaptive Management:** Track the amount of yard waste collected to determine whether public interest in the program is continuing.

**BMP No. 1.7**

**Public Involvement Activity:** Creek Clean Ups

**Measurable Goal:** The City will host at least two creek clean ups a year along creek banks owned by the City and the School District. These events will be advertised through social media as well as notifications to previous participants and the school district.

**Responsible Person:** MS4 Coordinator

**Tracking and Adaptive Management:** The following information will be tracked for each event: distance of creek bank cleaned, number of participants and number of large trash bags filled. Should the number of participants decrease, the method of advertisement will be reviewed. Should the number of trash bags increase, research into the changes in activities along the creeks as well as education on littering will be reviewed. Improvements such as increased numbers of trash cans, signage and possibly reaching out to frequent park users such as sports teams may be needed.

## Minimum Control Measure #2: Public Involvement and Participation in Program Development

The permittee shall develop and implement a comprehensive public participation program that provides opportunities for public participation in the development and oversight of the permittee's Stormwater Program.

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

**MCM #2 encourages public participation in this stormwater management plan through a public notice period and through incorporation of public comment.**

The MS4 Coordinator will provide a presentation to the City of Jackson's Mayor and Board of Aldermen yearly. These meetings are open to the public and the agenda is posted on the City's website prior to the meeting. Please see **Appendix 2-3** for the most recent Study Session Agenda.

### Public Notice Period

**4.2.A** The MS4 Operator shall hold a public notice period for a minimum of thirty (30) days to allow the public to review the draft permit, and description of the MS4s Stormwater Management Program (this may be the SWMP) prior to the submission of the renewal application to the Department.

The public notice period began on January 27, 2021 ended on February 17, 2021. Information on the SWMP was advertised in the local paper, The Cashbook Journal, on January 27, 2021 and February 3, 2021. Please see **Appendix 2-1** for the affidavit of publication for the newspaper posting.

The public hearing was scheduled during the Mayor and Board of Aldermen meeting on February 17, 2021. Please see **Appendix 2-2** for the meeting minutes for the February 17, 2021 meeting.

### Website

**4.2.B** As part of the public notice, if the MS4 Operator has a public website, the required items shall be posted on their website with a way to submit comments, along with the standard public notice methods for the MS4.

The agenda for the February 17, 2021 meeting (which included the public hearing) was posted on the City's Facebook page and the City's website.

1. The permittee shall respond to comments received during the comment period.

No comments were received during the hearing.

2. The MS4 Operator shall retain copies of any public comments and records of information submitted by the public received as part of the public notice process. These comments and responses shall be made available to the public or the Department upon request.

As shown on the meeting minutes in **Appendix 2-2**, no comments were received during the public hearing on February 17, 2021. Had there been comments, they would have been recorded in the meeting minutes and would have been available to be viewed by the public.

## Public Information Period

**4.2.C** The MS4 Operator shall hold a public information meeting to provide information on, or describe the contents of, the proposed Stormwater Management Program. This meeting shall be advertised at least thirty (30) days prior to the public meeting.

The public information meeting was held on February 17, 2021. The meeting was advertised in the local paper, The Cashbook Journal, on January 27, 2021 and February 3, 2021. Please see [Appendix 2-1](#) for the affidavit of publication for the newspaper posting.

1. As part of the notice of public meeting, if the MS4 Operator has a public website, the MS4 Operator shall post on that site, along with the standard public notice methods for the MS4. The notice of the public informational meeting, including the date, time and location.

The City of Jackson receives public inquiries and concerns via phone or online<sup>1</sup>. A screenshot of the online public comment form is in [Appendix 2-4](#). When an inquiry or concern is received, it is entered into the City's work order database. All types of municipal inquiries and concerns are logged into the database; those relating to stormwater are sent to the MS4 Coordinator to address.

2. The meeting must be held within the service area of the MS4. Co-permittees shall hold the meeting within the boundaries of each co-permittee.

The meeting was held at City Hall Board of Aldermen Chambers.

## Method to Accept Public Inquiries

**4.2.D** The MS4 Operator shall have a publicly available method to accept public inquiries, or concerns, and to take information provided by the public about stormwater and stormwater related topics.

1. This method, or a combination of method, shall encompass all MCMs of this permit. This method may be a phone number, website comment form, voicemail box, an email address, social media platform, or a combination of these.
2. All reports shall be tracked, recording the topic, location, and concern. This information can help identify pollutants of concern, priority areas, pollutant sources, educational needs, and other information the MS4 Operator may use to evaluate the Stormwater Management Program.

Same as 4.2.C: The City of Jackson receives public inquiries and concerns via phone or online<sup>1</sup>. A screenshot of the online public comment form is in [Appendix 2-4](#). When an inquiry or concern is received, it is entered into the City's work order database. All types of municipal inquiries and concerns are logged into the database; those relating to stormwater are sent to the MS4 Coordinator to address.

An initial response to public inquiries and concerns is provided within 24 hours. 90% of complaints/inquiries are resolved within 3 business days. The remaining 10% will include larger solutions that take significant planning and finances.

Evaluate the response times annually. If the above timelines are not being met, reevaluation must be done to determine if the reason is related to the notification process, availability of resources, or a larger system-wide issue that would require major infrastructure changes.

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<sup>1</sup> City of Jackson Contact Form (<http://www.jacksonmo.org/contact%20form.aspx>)

## Stormwater Panel or Committee

4.2.E If the MS4 Operator utilizes a stormwater management panel or committee, the MS4 Operator shall provide opportunities for citizen representatives on the panel or committee. The attendance of the meeting shall be recorded.

Not applicable.

## Board of Aldermen

4.2.F If the permittee has a governing board such as; County Council, City Council, or Board of Curators, a representative of the MS4 Operator, who is familiar with the MS4 Stormwater Program, shall provide an update to the governing board. This shall be conducted at minimum, annually with the status of, or updates on, the Stormwater Management Program, and compliance with the Stormwater Management Program.

The MS4 Coordinator updates the City Council on the status of the MS4 Stormwater Program in the 1<sup>st</sup> quarter of each year during a Board of Aldermen Meeting. Please see [Appendix 2-2](#) for the meeting minutes from the most recent update.

## Current Program Evaluation

4.2.G **Existing permittees:** Shall evaluate their current program to ensure it is in compliance with this permit and promoted to the community. Existing permittees shall modify their program as necessary, and develop and implement elements, as necessary, to continue reducing the discharge of pollutants from the MS4 to the maximum extent practicable, following the requirements of Section 4.2 of this permit.

The SWMP is being updated to match the current permit with this document. This SWMP will be reviewed at least annually for updates and improvements.

4.2.H **Newly regulated permittees:** Shall develop a stormwater Public Participation program. The Permittees shall have the program fully implemented by the end of this permit term.

Not applicable.

## Effectiveness Evaluation

4.2.I Tracking mechanisms shall be used for tracking attendance, inquiries or concerns per the requirements of Section 4.2 of this permit. Using adaptive management, all MS4 Operators shall review their Public Participation Program, at minimum, annually and update implementation procedures as necessary within the requirements of this permit. This shall be used to review how to best reach the public, the effectiveness of the mechanisms, the effectiveness of reaching the public and the MS4 Governing board and if the community and MS4 government are working together for water quality. Any additional events and/or BMPs shall be acknowledged in the Stormwater Management Program report.

No public comments were made during the comment period nor during the public meeting. The methods of advertising public comment will be evaluated with the 2023 permit to determine methods that will better engage the public.

## Minimum Control Measure #3: Illicit Discharge Detection and Elimination

The MS4 Operator shall implement and enforce 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 City's operating permit for Small Municipal Separate Storm Sewer System (MS4) requires that the City implement a program to detect and eliminate illicit discharges of non-stormwater to the stormwater system.

Implementation of each of these items is detailed in this document. **Appendix 3-1** shows the IDDE Flow Chart, which summarizes the City's procedures for illicit discharge detection and elimination.

For reference, Illicit Discharge as defined in 10 CSR 20-6.200 at 40 CFR 122.26(b)(2) is *“Any discharge to a municipal separate storm sewer that is not composed entirely of storm water, except discharges pursuant to a state operating permit, other than storm water discharge permits and discharges from fire fighting activities. “*

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

### Storm Sewer System Map

**4.3.A** A current storm sewer system map that shall be updated as needed to include features which are added, removed, or changed. This map may be paper or electronic. This storm sewer map, must show at a minimum:

1. The location of all MS4 outfalls. The map shall be detailed enough that the outfalls can be accurately located;
2. The names and locations of all receiving waters of the state that receive discharges from the MS4 outfalls;
3. The boundary of the regulated MS4 area;
4. The map shall be readily available and used by field staff as needed; and
5. The map and any accompanying necessary information shall be made available to the Department upon request.

The City's current storm sewer system map is located in **Appendix 3-2**. The storm sewers are saved electronically in the City's GIS system and exported to PDF for viewing. The PDF version of the map, which is included with this SWMP, is available to all staff and used during preparation for IDDE inspections and monitoring.

In the first quarter of each year, the MS4 Coordinator will confirm that all developments completed in the year prior have been entered into the map. If information is missing the process will be evaluated to determine a better trigger to ensure that information is entered. Additional staff may need to be trained to enter the information into the GIS System.

**4.3.B** The MS4 Operator must record the sources of information used for the map and track, at minimum:

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

Outfalls are numbered so they may be tracked. See Outfall Table located in **Appendix 3-3**. The date the outfall was most recently verified can be found in the Outfall Table along with the date it was first recorded.

## Prohibit Non-Stormwater Discharges

**4.3.C** The MS4 shall effectively prohibit non-stormwater discharges into the permittee's storm sewer system and implement appropriate enforcement procedures and actions.

This prohibition shall be through ordinance or other regulatory mechanism, to the extent allowable under state or local law. This may be accomplished by more than one ordinance or mechanism.

This may be done through a "nuisance code" however it must be certain that non-stormwater discharges are covered in this code. Such non-stormwater discharges may include, but are not limited to:

- Litter;
- Household hazardous waste disposal;
- Leaf disposal;
- Use of soaps & detergents with discharge to storm sewer;
- Illegal dumping of solid waste;
- Vehicle fluid disposal;
- Grass clippings;
- Pet waste; and
- Sewage.

City Ordinance Chapter 21 Article III regulates permissible discharges to the municipal storm sewer system and provides for enforcement of violations. A copy of City Ordinance Chapter 21 is in **Appendix 3-4**. Only stormwater is permissible to enter the stormwater system. Examples of illicit discharge<sup>2</sup> are sanitary sewage, industrial process wastewater, spilled and leaked fuels and oils, other industrial chemicals, and runoff from commercial car and truck washing.

However, exceptions<sup>3</sup> are allowed into the storm system: landscape irrigation water, groundwater, foundation drains, air conditioning condensate, runoff from riparian habitat, individual residential car washing, de-chlorinated swimming pool water, street washing, runoff from firefighting activities, dye testing of sewers, and NPDES permitted discharges.

The Ordinances, this SWMP and MS4 permit are reviewed annually for consistency and needed modifications to reduce stormwater pollution. The number of stormwater complaints, citations, comments heard by local officials, and conformance with City stormwater rules will be used to identify need for revisions.

## Dry Weather Field Screening Strategy

**4.3.D** A dry weather field screening strategy.

1. The MS4 Operator shall conduct (or have conducted on their behalf) outfall field assessments. The screening shall be conducted during dry weather conditions (a minimum of 72 hours after the last precipitation event) to check for the presence of a discharge.

Existing permittees:

- a) A minimum of 60% of all outfalls shall be screened during the permit cycle.
- b) Priority areas, such as those listed in 4.3.H, shall be screened each year.

Newly regulated permittees:

- a) All outfalls shall be located and screened during the 5 year permit cycle.
- b) Priority areas shall be established.

2. This screening shall include a checklist or other tracking device to; ensure a complete inspection of each outfall, enhance consistency, and to track the field screening. This shall be used regardless of the presence of dry weather flow.

<sup>2</sup> Ordinance 21-100 and 21-107. City of Jackson. 2020.

<sup>3</sup> Ordinance 21-107. City of Jackson. 2020.

When discharge is present, the checklist or tracking device shall note the following general observations and physical characteristics at a minimum:

- 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.)

Annually, during dry weather, City personnel inspect part of the City for storm sewer discharges. Locations of dry weather storm sewer discharge are inspected further as part of the IDDE.

The number and types of illicit discharges will be used to assess effectiveness of the IDDE program and to identify the need for program changes.

## Diagnostic Monitoring Procedures

**4.3.E** The MS4 Operator shall maintain diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows as part of the dry weather screening program.

These procedures are for possible illicit discharges, and may be collected, and analyzed by a contracted lab, or similar agreement with another entity who is equipped and experienced in sample collect and analysis.

1. This diagnostic monitoring shall include sampling unknown discharge from MS4 outfalls that are found to be flowing or ponding more than 72 hours after the last precipitation event and considered to be an illicit discharge.
2. The samples shall be analyzed for relevant parameters to determine if a pollutant is involved.
  - a) Relevant parameters will need to be determined on a case-by-case basis depending on the nature of the discharge and what the potential sources may be.
  - b) The MS4 Operator shall have the ability to sample for and analyze the samples. This may be done through a contract lab or similar agreement.
  - c) Possible parameters sampled for and analyzed when deemed applicable include but are not limited to:
    - pH;
    - Oil and grease;
    - E.Coli or fecal coliform;
    - Surfactants or fluorescence concentration;
    - Specific conductivity;
    - Ammonia;
    - Chlorine;
    - Dissolved oxygen; and
    - Fluoride/ hardness.

The MS4 Coordinator will be attending STREAM Team training in 2022 to better develop the City's testing and monitoring procedures. In the interim, any necessary testing will be done in coordination with the wastewater lab technician or through Environmental Analysis South.

## Tracing Illicit Discharge Source

**4.3.F** The MS4 Operator shall maintain 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 shall be traced. These procedures shall include mechanisms to locate and follow stormwater infrastructure. A variety of investigative tools may be used as appropriate for each situation, such as, but not limited to;

- Visually following the flow;
- Storm sewer system sampling;
- Full storm sewer map;
- Closed circuit television;
- Smoke or dye tracing; and
- Tunnel entry.

The following tools will be used as necessary to determine the source of an illicit discharge.

- Use the “Priority Area Map” described in Section 4.3.H below to determine if the source could be from a Priority Area.
- Upstream sampling and laboratory analysis of a suspected pollutant or indicator to track the source of an illicit discharge. The analysis will depend on the suspected stormwater contaminate. For example, if sanitary sewage is suspected as the contaminate, a series of follow-up inspections for a series of indicators is appropriate: visual inspection for excessive flow, field testing strips for pH, ammonia, nitrate, nitrite, alkalinity. If an industrial cooling water is suspected as a contaminate, visual inspection of manholes for excessive flow, test strips for pH and freeze point. For other cases, grab samples for situation-specific chemicals may be obtained and analyzed in a laboratory.
- Dye injected at suspected sources.
- CCTV inspections.

**4.3.G** The MS4 Operator shall maintain procedures for removing the source of the discharge.

After locating the source, the pollutant and source must be removed. While the exact procedure will depend on the source and the circumstances, The MS4 Operator must maintain any necessary contacts with appropriate entities that may be needed for these procedures (such as an environmental cleaning company). This information shall be made available to the responsible staff.

The MS4 Operator is encouraged to work with the source of the illicit discharge to remedy the situation. Possible remedies shall include:

1. Implement source control or treatment BMPs to prevent reoccurrence of the violation;
2. Remediation or restoration of affected property.

Illicit discharges are eliminated through the enforcement procedures detailed below. Illicit connections must be removed no matter when the connection was made. Public works officials have the right to enter industrial property at reasonable times to inspect and to collect samples at stormwater facilities that discharge to the municipal storm system or to water courses and to copy records related to stormwater.

The City may require reasonable best management practices to eliminate the discharge of pollutants to stormwater. The following procedures will be followed:

- When the source of an illicit discharge is located, public works officials will order compliance and corrective measures<sup>4</sup> by issuance of a warning, called a notice of violation (NOV). Corrective measures may include: time to complete corrective action, remediation, restoration, cleanup, disconnection of pollutant source from storm system, monitoring and record keeping, and monetary

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<sup>4</sup> Ordinance 21-116 and 21-127. City of Jackson. 2020.

payment to cover administrative costs of the public works officials while engaged in supervision of the corrective measures.

- If requirements of the NOV are unmet, the City may enter the facility to abate the violation.

If a violation is an immediate danger to public health or public safety, the public works department is authorized to enter the property and make the necessary measures to abate the violation. This is allowed in Ordinance 21-115, which can be found in **Appendix 3-4**.

Evaluate the enforcement procedures annually. If there are repeat offenders, then enforcement may not be strict enough, and actions/fines should be increased.

**4.3.H** In order to prevent further illicit discharge, the MS4 Operator shall identify priority areas such as, but not limited to:

- 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

Annually, the MS4 Operators shall evaluate this priority area list and/or map and update as necessary to reflect changing priorities.

If a co-permittee, each co-permittee shall identify priority areas within their boundaries.

The City has created a Priority Area Map which shows areas in the City that may be more likely to emit illicit discharges, such as the industrial areas and residential areas lacking a sanitary sewer main in the City's GIS system. In addition, the Priority Area Map also shows the current outfall inventory and current storm sewer system. The current Priority Area Map is in **Appendix 3-5**.

The Priority Area Map is to be updated as needed. Illicit discharges tracked in Section 4.3.L will be evaluated each year to identify patterns of areas or land use types that have higher a potential of illicit discharges. Areas of new development and developments near waterways will be evaluated to determine if they should be listed as high priority.

**4.3.I** The MS4 Operator shall maintain written procedures for implementing the IDDE Program, including those components described within this section, to ensure program continuity and consistency.

1. This shall include a description of this dry weather field screening strategy and implementation schedule to detect and address non-stormwater discharges, including discharges from illegal dumping and spills, to the permittee's system.
2. This shall include a description of how the discharge is evaluated and the possible parameters that are tested.
3. If contracted to another entity, the contact information shall be listed.

The City MS4 Coordinator will evaluate previous dry weather inspections and the stormwater "Priority Area Map" to select 12 percent of the outfalls for inspection each year.

The following is the step-by-step field procedure for dry weather inspection, as outlined in the "Illicit Discharge Field Investigation Checklist". See **Appendix 3-6** for the checklist.

- Look for evidence of contaminants by observing indicators: odor, visible discoloration, abnormal growth, debris, foam, turbidity, oil sheen. If evidence of contaminants is observed, notify the City MS4 Coordinator. The City MS4 Coordinator will determine the investigative steps to be taken to determine the source. Source determination investigation includes:
  - Outdoor industrial activity that is exposed to stormwater, such as material storage, waste storage, leaking dumpsters, and vehicle and equipment maintenance. (Such outdoor industrial activity is prohibited by City Ordinance Chapter 21 Article III and by USEPA regulations.)
  - Unpermitted discharge of industrial process wastes into the storm sewers.
  - Leakage from sanitary or industrial process sewers.
  - Leakage of septic tank effluent into stormwater system.
  - Leakage from septic tank leach fields.
  - Sanitary sewers connected to the stormwater system.

The City currently does not have a history of illegal dumping. The MS4 Coordinator has discussed the matter with the City Staff including the Police Department. Illegal dumping occurs more frequently in the rural areas of the County outside of City limits. The City also provides curb side special pick-ups for large quantities of solid waste up to 4 cubic yards. Active City of Jackson Solid Waste customers can use this service once per year for free.

The Police Department and other City Staff have been instructed to notify the MS4 Coordinator should illegible dumping occur.

## Illicit Discharge Investigation

**4.3.J** The MS4 Operator must conduct investigations in response to field screening discoveries, spills, or in response to complaints from the public, municipal staff, or adjacent MS4s.

The investigation must work to determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection.

Responses shall meet the following investigation timelines:

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 (or refer to the appropriate agency with the authority to act) 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 Operator's municipal storm sewer system, the MS4 Operator must notify the other MS4's Operator within 24 hours of discovery or as soon as practicable.

When an illicit discharge is detected, an initial investigation will be performed within 24 hours. Any discharges that could result in an immediate threat to safety will be addressed immediately. Discharges from obvious single sources will be addressed immediately. Discharges requiring further investigation will be resolved within 5 days.

If response times are not being met, evaluate why they aren't being met and determine what part of the process is delaying it.

## Enforcement

**4.3.K** The MS4 Operator shall have procedures for appropriate enforcement, this may include fines, the ability to collect cleanup and abatement costs, and actions to ensure that the permittee's illicit discharge ordinance (or other regulatory mechanism) is being implemented.

1. The MS4 Operator shall maintain a written description of the enforcement procedure. This shall include a copy of or link to the ordinance and/or other regulatory mechanism that the MS4 Operator will use to enforce the prohibition of illicit discharges into the MS4.

Illicit discharges are eliminated through the enforcement procedures detailed in City ordinances and in this document. Illicit connections must be removed no matter when the connection was made. Public works officials have the right to enter industrial property at reasonable times to inspect and to collect samples at stormwater facilities that discharge to the municipal storm system or to water courses and to copy records related to stormwater.

The City may require reasonable best management practices to eliminate the discharge of pollutants to stormwater. The following procedures will be followed:

- When the source of an illicit discharge is located, public works officials will order compliance and corrective measures<sup>5</sup> by issuance of a warning or notice of violation (NOV). Corrective measures may include: time to complete corrective action, remediation, restoration, cleanup, disconnection of pollutant source from storm system, monitoring and record keeping, and monetary payment to cover administrative costs of the public works officials while engaged in supervision of the corrective measures.
- If requirements of the NOV are unmet, the City may enter the facility to abate the violation.

If a violation is an immediate danger to public health or public safety, the public works department is authorized to enter the property and make the necessary measures to abate the violation. This is allowed in Ordinance 21-115; see **Appendix 3-4** for the Ordinance.

## Dry Weather Field Screenings

**4.3.L** The MS4 Operator shall maintain a database, or other centralized system, to track dry weather field screenings, spills, incidents, and investigations.

1. Tracking mechanisms shall be used for incidents, investigations, enforcement and follow up. This data shall be used to continuously evaluate the effectiveness of the IDDE program. This data shall be reviewed to determine if there is a new priority area.

The MS4 Operator shall record annually at a minimum:

- a) Number of outfalls screened;
- b) Number of complaints received and investigated; and
- c) Number of illicit discharges removed.

The MS4 Coordinator will keep a log of outfall inspections as part of the IDDE program. Each year, approximately 12% of the outfalls are inspected in a rotation so that 60% of the outfalls are inspected once in a five-year long IDDE inspection program. For each five-year inspection program, the log will contain a list of all outfalls and the year of assigned inspections. The date of actual inspections will be added to track progress.

2. The MS4 Operator shall document all investigations to track at a minimum:
  - a) The date(s) the illicit discharge was observed and investigated;
  - b) Summary of procedures used to investigate the illicit discharge;
  - c) The outcome of the investigation including sample results and findings;
  - d) Any follow-up of the investigation including cleanup, enforcement actions, visits to confirm the illicit discharges have been removed; and

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<sup>5</sup> Ordinance 21-116 and 21-127. City of Jackson. 2020.

e) The date the investigation or issue was closed or resolved.

The MS4 Coordinator will keep a log of illicit discharges which are identified and investigated. The log will include the procedures used to investigate the discharge, the outcome of the investigation, and any follow-up actions. The date of identification and resolution will also be logged.

## Coordination with MCM #1 and #6

**4.3.M** The MS4 Operator shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste, this may work with part 4.1 and part 4.6 of this permit (MCM #1 and MCM #6).

The public and businesses will be informed of the hazards of illicit and illegal discharges in coordination with MCM #1. See below for the information on the BMP which will coordinate the efforts of both MCM #1 and MCM #3.

### BMP No. 3.1

**Target Audience:** Businesses that typically produce illicit discharges (automotive businesses, car washes, ready mix plants).

**Target Pollutant:** Common business-related illicit discharges (waste oil, car wash runoff, concrete washout, etc.)

**Reasoning:** Certain businesses include operations that produce wastes that are often released as illicit discharges. Reminding these businesses of proper disposal procedures will reduce the number of illicit discharges.

**Action Taken:** Supply an educational brochure regarding improper disposal of materials to these businesses with the renewal of their business license. As a part of their business license application, the City requires them to sign a form that they have read the attached documentation. See **Appendix 1-3** for an example.

**Measurable Goal:** Send to every business during license renewal. Track businesses that receive educational brochures. Track the illicit discharges that are detected from these business types.

**Responsible Person:** MS4 Coordinator and Building and Planning Manager.

**Iterative Process Evaluation:** Track the number of illicit discharges from these business types. The first two years will be used as a baseline and subsequent following years should show a decrease in violations. If a decrease is not observed, then assess the educational material provided and target audience for applicability.

**Schedule:** With license approval.

In addition, City Employees will be informed as part of the training detailed in MCM #6.

## Annual Review

**4.3.N** All MS4 Operators shall review their IDDE Program, at minimum, annually and update implementation procedures as necessary.

The IDDE Program is reviewed annually and updated. In addition, should procedures need to change between annual reviews, those procedures are updated as needed. The review will be of completeness of schedule inspections, complaints of IDDE, and visual evaluation of streams for pollution-caused distress.

If certain locations or land use types are showing an increase in illicit discharges, education and outreach efforts may be adjusted to target that particular geographic area or land use type.

After an initial two years, the number of illicit discharges found annually should remain consistent or decrease. An increase after two years will trigger the need to reevaluate the training of staff, reporting procedures and education efforts.

**4.3.O Existing permittees:** Shall evaluate their current program to ensure that it is in compliance with this permit.

1. Any revisions to the ordinance or regulatory mechanism shall be complete in the first year of the permit cycle.
2. Maintain an updated map with the items listed above. Items not included in the current map must be added within the first 2 years of the permit cycle.

This SWMP reflects updates to the existing IDDE Program to bring it into compliance with this permit. Map updates are included in the annual review.

**4.3.P Newly regulated permittees:** Shall develop an IDDE Program. Newly regulated permittees shall describe the IDDE program in their SWMP. The MS4 Operator shall have the program fully implemented within five (5) years of permit issuance.

1. If the MS4 Operator needs to develop the regulatory mechanism, the ordinance or regulatory mechanism must be adopted within the first 3 years of permit coverage.
2. Develop or update a map in accordance with Section 4.3.A of this Permit. The MS4 Operator must develop or update a map with the items listed above. All outfalls shall be dry weather field screened within the first five (5) years of permit issuance.

Not applicable.

## IDDE Training Program

**4.3.Q** The MS4 Operator must develop and implement or maintain a training program for all municipal field 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.

This shall include staff who may handle materials which may become an illicit discharge. This shall include discharges through spills, improper disposal, mismanagement, improper vehicle or equipment washing or rinsing. This training may be conducted with resources online and may be focused for what topics are relevant to their position.

1. Each staff shall take this training at minimum within one year of a new employee being hired.
2. The applicable staff may include the following; (unless the MS4 Operator does not have the listed department under their jurisdiction). Additional staff or departments shall be included if appropriate;
  - Fleet maintenance staff;
  - Staff at facilities with fuel, chemicals, washing of vehicles or equipment;
  - Road maintenance staff;
  - Road salt/de-icing staff; and
  - Parks, swimming pool, or golf course staff who encounter spills, equipment or vehicle washing, fueling, chemicals, etc.
3. The training dates, topics and the attendance shall be recorded.

4. Reviews of the training effectiveness shall be considered after municipal site inspections or after an 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 MS4 Operator should consider if the training is enough or is ineffective. The MS4 Operator shall consider ways to survey or test staff to see if the training is effective.

A training program is currently being developed. See [Appendix 6-1](#) for a standard form to track employees, training dates, and attendance.

The effectiveness of training will be reviewed after municipal site inspections or after an incident occurs. Changes to the training program will be recorded in the annual report.

## Effectiveness Evaluation

**4.3.R** Using adaptive management, the MS4 Operator shall review their IDDE Program, at minimum, annually and update implementation procedures as necessary. This data shall be used to continuously evaluate the effectiveness of each BMP and the implementation of each BMP.

Any additional BMPs shall be acknowledged in the Stormwater Management Program report.

The IDDE Program is reviewed annually and updated. In addition, should procedures need to change between annual reviews, those procedures are updated as needed. The review will be of completeness of schedule inspections, complaints of IDDE, and visual evaluation of streams for pollution-caused distress. Map updates are included in the annual review.

## Minimum Control Measure #4: Construction Site Stormwater Runoff Control

The MS4 Operator shall 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 shall be 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.

The City's procedures to control construction site stormwater runoff are detailed in this document and in the Site Inspection Flow Chart ([Appendix 4-1](#)) and Inspection Non-Compliance Flow Chart ([Appendix 4-2](#)). These procedures will be reassessed in each annual report.

### Regulatory Mechanism

**4.4.A** The MS4 Operator shall have a law, ordinance and/or other regulatory mechanism 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. The mechanism shall include sanctions which are designed to ensure compliance, to the extent allowable under State, or local law.

The City's operating permit for Small Municipal Separate Storm Sewer System (MS4) requires that the City implement a program to reduce pollutants in stormwater runoff from construction activities with land disturbance greater than or equal to one acre, or part of a larger common plan or development or sale that would disturb one acre or more. City Ordinance Chapter 21 Article II regulates sediment and erosion control for site development and redevelopment and provides for enforcement of violations. A copy of the applicable ordinances is in [Appendix 4-3](#). Revisions to the Ordinance are occurring in 2022 to align the ordinance with the Comprehensive Permit.

The City's ordinances<sup>6</sup> require construction site operators working at sites with a grading permit to implement appropriate erosion and sediment control best management practices. The ordinance also requires the operators to control waste such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site.

While the current ordinances do cover what is necessary for the MS4 Permit, the City plans to evaluate ordinances pertaining to construction site stormwater pollution to align with DNR requirements. The intent is to make the ordinances clear and easy for contractors to follow. One ordinance revision in progress is to make it clear that the City requires a Stormwater Pollution Prevention Plan (SWPPP). One SWPPP can satisfy the requirements for both the State permit and the City permit.

### Pre-Construction Review

**4.4.B** The MS4 Operator shall review pre-construction plans. These reviews at a minimum shall:

1. Incorporate the consideration of potential water quality impacts through procedures for site plan review. The site plan review procedures shall evaluate threats to water quality shall by considering, at minimum, the following factors:
  - a) Soil erosion potential;
  - b) Site slope;
  - c) Project size and type;
  - d) Sensitivity of receiving waterbodies;

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<sup>6</sup> Ordinance 21-41. City of Jackson. 2020.

- 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.

2. Use a checklist, or other listed criteria, to ensure consistency and completeness.
3. Include requirements for construction site operators to select, install, implement, and maintain appropriate stormwater control measures.
  - a) 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.
4. Consider ways to minimize disturbed areas through actions such as, phased construction requirements, temporary seeding or sodding, or erosion mats to exposed areas.
5. Include requirements for construction site operators to control construction-site waste that may cause adverse impacts to water quality.

This shall include at a minimum:

  - a) Discarded building materials;
  - b) Concrete truck, and mortar mix washout;
  - c) Chemicals (such as fertilizer, paint, oils, herbicides, pesticides);
  - d) Litter; and
  - e) Sanitary waste.

For all sites with greater than one acre of disturbance, or part of a larger common plan or development or sale that would disturb one acre or more, a Grading Permit is required. The Grading Permit application requires:

- A copy of the Missouri Department of Natural Resources (MDNR) land disturbance permit (if required by MDNR),
- Floodplain development permit (if required),
- An estimated cost of all work to be done under the Stormwater Pollution Prevention Plan (SWPPP) also known as sediment and erosion control plan (if required by MDNR),
- A bond or other acceptable financial instrument in the amount of the estimated cost (can be waived by the MS4 Coordinator for individual single family residential),
- A detailed site plan with details of erosion control methods, and
- A stormwater pollution prevention plan.

The Grading Permit application is in **Appendix 4-4**. When a Grading Permit is received, the City MS4 Coordinator checks that the plans and stormwater pollution prevention plan (SWPPP) meet the requirements described in the ordinance (Ordinance 21-41, located in **Appendix 4-3**). The Grading Permit Checklist, found in **Appendix 4-5**, is used by the City to check that the application and project meet all ordinance requirements. When all the items listed on the checklist are satisfactory, the Grading Permit is issued.

Records of issued Grading Permits, such as review checklists, will be kept in the City's iWorq system.

## Inspections and Enforcement

**4.4.C** The MS4 Operator shall establish authority for site inspections and enforcement of control measures. To the extent allowable by state, federal, and local law, all MS4 Operators shall implement procedures for inspecting construction/land disturbance projects.

The construction site runoff control program shall implement at a minimum:

1. Identify priority sites for inspection based on nature of the construction activity, topography, disturbed

area, and the characteristics of soils and sensitivity of, or proximity to, receiving water;

When there are multiple sites that need to be inspected in a short time frame, the City prioritizes sites with a history of violations, complaints, and/or in close proximity to waters of the state. If there are no sites in that category, then the largest sites will be made a priority. Active sites are categorized by a 1, 2, or 3 according to their priority rank; 1 is high priority and 3 is low priority.

2. Construction site inspections shall include assessment of compliance with the MS4 Operator's construction site stormwater runoff control ordinance or regulatory mechanism, and other applicable ordinances;
3. The inspections shall evaluate any structure that functions to prevent pollution of stormwater or to remove pollutants from stormwater and use enforcement policies to require BMPs are implemented and effective;
4. Final inspection, upon completion of the land disturbance and prior to final approval of construction project. Ensure all disturbed areas have been stabilized, that all temporary erosion and sediment control measures are removed.
5. The inspections conducted by the MS4 Operator shall be documented with a checklist. The checklist must include structural BMPs and check on the self-inspection which are conducted by the construction site operator. These MS4 Operator checklists may be electronic.

The City conducts inspections of the sediment and erosion control at the beginning of construction. This inspection is called the "Site Check," and it occurs after sediment and erosion control devices are in place and prior to excavation on the site. During this inspection, the inspector checks that the contractor has the SWPPP documents readily available and has identified a location to store the SWPPP self-inspections.

If the Site Check is satisfactory, the inspector so indicates on the City's inspection record. The inspector uses an inspection checklist called the Construction Site Pollution Prevention Checklist, in **Appendix 4-6**, for sediment and erosion control. If inadequate sediment or erosion control is observed, the inspector notes the deficiencies on the inspection checklist and informs the contractor what changes are required and the schedule for the changes.

Inspectors also check the sediment and erosion control devices mid-construction. Required inspections are pre-loaded onto each construction project when they are entered into the City's inspection tracking system. One such pre-loaded inspection is an erosion control inspection to occur during construction. If the sediment and erosion control inspections are satisfactory, the inspector so indicates on the City's inspection record. If inadequate sediment or erosion control is observed, the inspector notes the deficiencies on the inspection record and informs the contractor what changes are required and the schedule for the changes. See attached for the SWPPP items that are checked during the inspection.

For grading permits issued in conjunction with a building permit, erosion and sediment control is inspected with each inspection required for the building permit. Any site with inadequate erosion and sediment control will not be able to pass a building inspection.

The inspector is prompted by the checklist to give a follow-up date to determine whether deficiencies were addressed appropriately. The Site Check inspection and subsequent inspections are linked and available to the inspector so the inspector can make thorough re-inspections.

When final stabilization of a site is complete, the City MS4 Coordinator will complete a final inspection. If the final stabilization is adequate, the City MS4 Coordinator will document such in a memo to the City Clerk, releasing the land disturbance bond. If the final stabilization is inadequate, the procedures for an unsatisfactory inspection are followed.

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

The program shall have written procedures to ensure compliance with the MS4 Operator's construction site runoff control regulatory mechanism. This shall include the sanctions and enforcement mechanisms the permittee will use to ensure compliance and procedures for when certain penalties, injunctions or other measures will be used.

1. The MS4 Operator must have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance.
2. Enforcement responses to violations must consider the following criteria at minimum:
  - a) Degree and duration of the violation;
  - b) Effect the violation has on the receiving water;
3. Enforcement actions shall be timely in order to ensure the actions are effective. These procedures and actions must be written and available for MS4 staff for consistency and training purposes.
4. The MS4 Operator must have a minimum of two (2) enforcement actions they are able to use. Possible enforcement actions include, but are not limited to:
  - a) Stop Work orders;
  - b) Verbal education or educational materials given to the construction site operator;
  - c) Written warnings or notice of violation;
  - d) Bonding or escrow requirements;
  - e) Fines/ penalties; and
  - f) Denials for previous non-compliance or current non-compliance at other sites.

When inadequate sediment or erosion control or self-inspection is observed during a City inspection, the contractor is notified what changes are required and the schedule for the changes and re-inspection. Additionally, the contractor is then required to submit self-inspections weekly.

If non-compliance persists, a stop work order is issued verbally and by certified letter. If non-compliance continues to persist or a major safety concern is identified, the City will issue a notice of violation and fines as described in City Code Chapter 1 Article II Section 1-20, which can be found in [Appendix 4-7](#).

The MS4 Coordinator will review the total number of violations, re-inspections, and stop work orders annually. If the numbers increase after two years or if there are repeat offenders, the levels of enforcement will be revised.

**4.4.E** The MS4 Operator shall require the construction site operator to conduct inspections at minimum:

1. Every fourteen (14) days, when construction is active.
2. Within 72 hours of any storm event, and within 48 hours after any storm event equal to or greater than a 2-year, 24-hour storm has ceased.

Checklists used for these inspections conducted by construction site operators shall either be submitted to the MS4 Operator, or the MS4 Operator shall verify that these inspections are being conducted by the construction site operator checklists during MS4 Operator inspections.

The City requires the contractor to perform self-inspections in conformance to the above timing requirements. Self-inspects are checked during each inspection of the site. Should a permittee fail to complete the inspections as required, the permittee will be required to submit the inspections to the MS4 Coordinator weekly for the remainder of the project.

## Tracking Procedures

**4.4.F** The MS4 Operator shall maintain an inventory of active public and private land disturbance sites, as defined in Section 4.4 of this permit. This may be supplemented with records such as a plan review checklist and email correspondence.

The inventory must contain:

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

3. If the site is a priority site/ how high of priority;

The MS4 Coordinator will keep a log of land disturbance sites based on permit applications. The log will indicate the anticipated date of each City land disturbance inspection, summary of inspection and action required and follow-up inspection dates, and land disturbance closeout. The log will be sorted periodically to schedule follow-up inspections.

**4.4.G** The MS4 Operator shall track their oversite inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request.

The tracking must contain at a minimum:

1. Inspection dates and time;
2. Inspector name;
3. Inspection findings; and,
4. Follow up actions and dates, including corrective actions and enforcement actions.

See Section 4.4.C and 4.4.F for information on tracking City inspections.

## Current Program Evaluation

**4.4.H Existing permittees:** Review the Stormwater Management Program including ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with these requirements. Any changes necessary to be in compliance with this permit shall be completed within the first year of this permit issuance.

The inventory of active sites must be updated as new projects are reviewed and projects are completed. If the MS4 Operator needs to develop this inventory, it shall be completed within one (1) year of this permit issuance.

This SWMP reflects updates to the existing Construction Site Runoff Program to bring it into compliance with this permit.

**4.4.I Newly regulated permittees:** If the MS4 Operator needs to develop this construction site runoff program, the SWMP shall describe the construction site stormwater plan and scheduled implementation. Development of this program shall be completed within the first three (3) years of the permit issuance. If the MS4 Operator's ordinance or regulatory mechanism is already developed, the permittee shall include a copy of the relevant sections with the SWMP. For new permittees, the inventory must be completed with one (1) year of permit issuance and then updated as new projects are permitted.

Not applicable.

## Public Input

**4.4.J** The Stormwater Management Program must include procedures for the MS4 Operator to receive and consider information submitted by the public about land disturbance sites. This may be in combination with 4.2.D of this permit.

Citizens can report a construction site sediment release by phone or by entering a comment on the City's website. When a stormwater complaint is received (via phone or the City's website), it is logged into the City's Work Order system and the public works department is notified to inspect. The inspector documents the problem on the electronic inspection record and informs the contractor what changes are required and the schedule for the changes. In addition, the City MS4 Coordinator may review with the contractor prior self-inspection reports.

## Employee Training

**4.4.K** The MS4 Operator shall provide, or support access to, construction site runoff control training for MS4 inspectors and plan reviewers at minimum once during this permit cycle. This education shall be tracked or documented.

Inspectors are trained upon hiring and retrained once per year utilizing the online training from the EPA (<https://www.epa.gov/hpdes/construction-inspection-training-course>). The MS4 Coordinator will keep a log of inspectors and date of training. Once per year, the MS4 coordinator will review the inspector log for current training. If training is not current, the MS4 Coordinator will schedule training.

**4.4.L** The MS4 Operator must provide written procedures outlining the local inspection and enforcement procedures to their inspectors to ensure consistency among the inspections.

Inspectors are provided this the inspection and enforcement procedures included in this SWMP to ensure consistency among inspections.

## Effectiveness Evaluation

**4.4.M** Using adaptive management, all MS4 Operators shall review, at minimum annually, their Construction Site Stormwater Runoff Control Program and evaluate the ordinances, 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. This annual review may include but is not limited to:

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

Annually, the MS4 Coordinator will provide a summary of all projects reviewed for a Grading Permit and inspected. Common violations and frequent questions will be noted. This shall be the basis for modifications to the program, ordinances, permit requirements, scheduling of inspections, training for inspectors and contractors.

Additionally, the MS4 Coordinator will review the documentation procedures annually. If review checklists and permit applications are lost or not easily located, then standard practices and procedures related to review must be revised.

## Minimum Control Measure #5: Post-Construction Stormwater Management in New Development and Redevelopment

The MS4 Operator shall continue or 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 MS4's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts

### Regulatory Mechanism

**4.5.A** The MS4 Operator shall maintain and utilize an ordinance(s) or other regulatory mechanism(s) 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 goal of this approach is to arrive at designs that protect sensitive areas, minimize the creation of stormwater pollution, utilize BMPs that effectively remove stormwater pollution, and attempt to maintain predevelopment runoff conditions.

The MS4's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts from stormwater, after construction.

1. If adopting a set of standards from another MS4 or other established standards, the MS4's ordinance may incorporate by reference, therefore the MS4 does not need to incorporate the entire guidance into their codes.
2. This program may be accomplished through one or multiple ordinances or regulatory mechanisms.

Post-construction runoff from new development and redevelopment is being addressed by City ordinance revisions in 2022 to align with the permit.

### Water Quality BMPs

**4.5.B** The MS4 Operator shall continue or develop a strategy to minimize water quality impacts. This shall include a combination of structural and/or non-structural controls (BMPs) appropriate for the permittee's 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 ordinance or regulatory mechanism for structural post-construction controls, or water quality facilities, shall include:

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

These post-construction stormwater standards are 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.

The MS4 Operator must adopt or maintain local stormwater discharge design standards that 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.

**Detention.** Detention is required for development and redevelopment sites with three or more acres of disturbance. The ordinance requires that post-developed flows may not exceed pre-

developed flows for the 2-, 10-, and 100-year storms. Plans are checked for detention during the review of the Building and Planning Submittals such as preliminary plats, drainage reports, or site improvement plans. A copy of Ordinance 57-10(h) is in **Appendix 5-1**.

The detention requirement includes runoff rate reduction to pre-developed conditions for the two-year storm, which is traditionally the bank-forming storm. This requirement reduces erosion potential due to development and redevelopment.

**Water Quality.** Additionally, permanent water quality treatment will be required for sites disturbing more than one acre or are part of a larger plat that disturbs an acre or more. Water quality requirements are not currently in the City Ordinance but will be added in 2022.

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 ordinance(s) or regulatory mechanism(s) for non-structural post-construction controls, shall include:

a) Adoption or development of preventative actions that involve management and source controls such as, but not limited to:

- Policies and ordinances that provide requirements and standards to direct development to identified areas;
- Protection of sensitive areas such as wetlands and riparian areas;
- Maintain and/or increase open space (which may include a dedicated funding source for open space acquisition);
- Maintain requirements for buffer zones along water bodies;
- Require minimizing impervious surfaces;
- Require minimizing disturbance of soils and vegetation;
- Policies or ordinances that encourage infill development in higher density urban areas, and areas with existing infrastructure;
- Programs which incentivize the use of green infrastructure;
- Requirements for minimization of directly connected impervious areas; and
- Tree preservation ordinances.

**Stream Setbacks.** An ordinance requires a 30-ft vegetation setback protection for streams with a watershed of 100 or more acres. A copy of Ordinance 57-10(h)(2)b is in **Appendix 5-1**.

The outfall inspections include notes concerning the general appearance of the creek. This information will be reviewed annually to determine if certain watersheds are experiencing increases in erosion. If so, the watershed will be reviewed to see if setbacks are not being maintained (i.e. non-permitted structures built within the setback) or if the setback limits need to be increased.

**Stream Debris.** An ordinance requires property owners with existing watercourses to keep those watercourses free of trash, debris, or other pollutants. A copy of Ordinance 21-109 is in **Appendix 5-2**.

The outfall inspections include notes concerning the general appearance of the creek. This information will be reviewed annually to determine if certain watersheds are experiencing increases in trash, debris, or other pollutants. If so, the watershed will be reviewed to see if the increase is related to poor maintenance by property owners.

**Scour Protection.** An ordinance requires scour protection at the discharge of detention basins and other outfalls, which protects drainage ways and reduces pollution due to sediment from erosion. A copy of Ordinance 21-43(e) is in [Appendix 5-3](#).

**4.5.C** Pre-construction plan review shall be conducted by the MS4 Operator 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 shall; protect sensitive areas, minimize the creation of stormwater pollution, and effectively reduce stormwater pollution. This can be achieved by reasonably mimicking pre-construction runoff conditions on all affected new development projects, or the permittee may achieve this goal through a method more appropriate for its community.

1. The plan review process shall use a checklist. This may be part of the same plan review in MCM 4.
2. The plan review process shall evaluate non-structural BMP selection first, such as comprehensive plans, zoning ordinances, buffer strips, and/or maximization/preservation of open space. Non-structural BMPs primarily prevent stormwater runoff from a site, which could influence the options for structural BMPs which help mitigate the stormwater related impacts after they have occurred.

The structural and non-structural controls required are assessed with the Building and Planning Submittals such as preliminary plats, drainage reports, or site improvement plans.

## Operation and Maintenance

**4.5.D** The MS4 Operator shall have ordinances or similar enforcement mechanisms to ensure adequate long-term operation and maintenance (O&M) of the selected BMPs, including, as appropriate, agreements between the MS4 Operator and other parties such as post-development landowners or regional authorities.

1. Long term O&M shall be addressed during the plan review and approval process.
2. Copies of O&M manuals shall be retained by the party responsible for the post-construction BMP, and with the MS4 Operator. This may be done electronically.

The City will develop BMP operation and maintenance ordinances during 2022.

## Inspection and Enforcement

**4.5.E** The MS4 Operator shall inspect, or require inspection of, each water quality structural and non-structural water post-construction BMP according to the following at minimum:

1. A minimum of one (1) inspection shall 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.
  - a) The MS4 inspector shall have access to the approved plans to ensure proper installation.
2. A minimum of once in the first three years after the installation by, the MS4 Operator.
3. Annually by the owner or operator of the post-construction BMP, or by the MS4 Operator. If completed by the BMP owner or operator, this inspection report shall be submitted to the MS4 Operator for evaluation and review.
4. The MS4 Operator shall inspect a minimum of 60% of all water quality post-construction BMPs within the five year permit cycle. This must include installations with ongoing or open enforcement issues.

The City will develop BMP inspection and maintenance agreement procedures during 2022. An example post-construction BMP checklist is in [Appendix 5-3](#).

**4.5.F** The MS4 Operator must maintain a plan designed to ensure compliance with the MS4's post-construction water quality regulatory mechanism. This plan shall include escalating enforcement mechanisms the MS4 Operator will use to ensure compliance.

The MS4 Operator must have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance.

1. Enforcement responses to violations must consider at minimum:
  - a) Degree and duration of the violation;
  - b) Effect the violation has on the receiving water;
  - c) Compliance history of the post-construction BMP owner or operator; and
  - d) Cooperation of the owner or operator with compliance efforts.

[The City will develop post-construction compliance procedures in 2022.](#)

**4.5.G** Enforcement actions shall be timely in order to ensure the actions are effective. The MS4 Operator shall begin enforcement actions within thirty (30) days of discovering a violation.

The MS4 Operator shall maintain a minimum of two possible sanctions. These include, but are not limited to:

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

[The City will develop post-construction compliance procedures in 2022.](#)

## Tracking

**4.5.H** The MS4 Operator shall maintain an inventory tracking the water quality post-construction BMPs. This inventory must contain, at a minimum:

1. Relevant contact information for the responsible person(s) or entity (e.g., tracking number, name, address, phone, etc.);
2. The type of post-construction BMP;
3. Applicable operations and maintenance documents;
4. Date the MS4 Operator approved the construction site plan; and,
5. If the water quality facility is owned or operated by the MS4, the tracking shall also include any maintenance, such as sediment clean-out or replanting.

[The City will develop post-construction compliance procedures in 2022.](#)

**4.5.I** The MS4 Operator shall also track the post-construction BMP inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request.

The MS4 Operator shall track at a minimum:

1. Inspection dates/ times;
2. Inspector name(s);
3. Inspection findings; and,
4. Follow up actions including all enforcement actions.

[The City will develop post-construction compliance procedures in 2022.](#)

## Current Program Evaluation

**4.5.J** **Existing permittees:** Evaluate the ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with these requirements and determine if changes are needed. Any changes necessary to be in compliance with this permit shall be completed within the first two (2) years of permit issuance.

The inventory of water quality facilities must be updated as new facilities are added and projects are completed. If the MS4 Operator needs to develop this inventory, it shall be completed within two (2) years of this permit issuance.

Ordinances, permitting procedures, review procedures, inspection procedures, and enforcement procedures have been updated with this SWMP. Additional post-construction compliance procedures will be developed in 2022. The effectiveness of these items will be assessed with the next annual review.

**4.5.K Newly regulated permittees:** Shall develop the ordinance or regulatory mechanism. Development of this program shall be completed within the first five (5) years of the permit issuance. For new permittees, the inventories of public and private post-construction water quality BMPs must be completed within two (2) years of permit issuance and then updated as new projects are permitted and projects are completed.

**Not applicable.**

## Employee Training

**4.5.L** The MS4 Operator shall provide appropriate training for MS4 inspectors at minimum once every permit cycle. This may include Green Infrastructure training, or specific operation of proprietary post-construction BMPs. The MS4 shall provide overall training to explain the function of both structural and non-structural post-construction water quality BMPs.

**The City will develop post-construction inspector procedures in 2022.**

## Effectiveness Evaluation

**4.5.M** Using adaptive management, all MS4 Operators shall 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. This annual review may include but is not limited to:

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

Any additional programmatic BMPs shall be acknowledged in the Stormwater Management Program Report.

**During preparation of the annual MS4 report, the City will review complaints and inspection results to identify changes to the post-construction stormwater management program. Annually, the MS4 Coordinator will evaluate the results of inspections completed by the City. After two years, the number of facilities failing the inspection or requiring follow up inspections should reduce. If failures continue to increase, the maintenance program must be evaluated and updated.**

## Minimum Control Measure #6: Pollution Prevention/Good Housekeeping for Municipal Operations

The permittee shall 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 municipal operations.

The MS4 Operator shall maintain and utilize an employee training program for MS4 municipal operations staff. The training shall be given at 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.

### Training Program

**4.6.A** The training shall be used to prevent and reduce stormwater pollution.

The training shall cover a minimum of the following topics/activities (if applicable to the MS4):

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; and
11. Illicit Discharges.

The training program includes the listed topics/activities. See below for descriptions of the training types.

**4.6.B** The MS4 Operator shall:

1. Maintain material to use in the training program, such as those available from the EPA, the state, or other organizations.
2. Maintain written procedures for the training program. Include a description of how this training will coordinate with all other minimum control measures (such as Illicit Discharge), monitoring and TMDL implementations where applicable.
3. Maintain a written schedule to offer topic specific training when it is appropriate. Such as, swimming pool discharges in the summer, leaf disposal in the fall, proper salt clean-up and usage in the winter.

The training types, and who receives the training, are described below. The City is in the process of developing the training material to meet the requirements of the permit. Once the training material is determined, it will be included in future SWMP documentation. Training for monitoring and TMDL implementations are not applicable.

**Illicit Discharge Detection and Elimination Training.** All City Staff who regularly work outside of the office (including Street, Sanitary Sewer, Water, Electric, Sanitation, Building and Planning, Park, Cemetery, Police, Fire, and Administration) will be trained to identify and report illicit discharges as they move about Jackson completing their normal duties. Refresher training will occur once per year. The staff that are unable to attend the annual training receive on-the-job training informally. This training helps to successfully complete the goals in MCM #3.

**Construction Site Stormwater Pollution Inspection Training.** Building inspectors are trained in the inspection of stormwater pollution prevention measures at construction sites. The training occurs yearly. Refresher training is offered as needed. This training helps to successfully complete the goals in MCM #4.

**Fertilizer, Insecticide, and Pesticide Training.** City personnel who handle fertilizers, insecticides, and herbicides are trained in their proper usage. New employees receive on the job training and additional training is provided annually. This training helps to successfully complete the goals in MCM #6.

**Good Housekeeping Training.** All municipal operations staff is trained yearly on good housekeeping measures to reduce stormwater pollution due to day-to-day activities. This training helps to successfully complete the goals in MCM #6.

All training types, dates, and attendees are tracked in a single spreadsheet. See **Appendix 6-1** for an example of the spreadsheet.

## **Municipal Operations and Facilities**

**4.6.C** The MS4 Operator shall maintain a list of all municipal operations/facilities that are impacted by this operation and maintenance program.

This shall include a minimum of the following if owned and operated by the MS4 and if applicable to the MS4:

1. Maintenance yards;
2. Fleet or maintenance shops, including parks department;
3. Storage yards;
4. Parks, golf courses, swimming pools, and splash pads;
5. Municipal parking lots;
6. Salt/sand storage locations;
7. Snow disposal areas; and
8. Other locations expected to contribute floatables and/or pollutants.

A list of all municipal operations and facilities is located in **Appendix 6-2**. The list also indicates which facilities are subject to a NPDES permit. For each facility, the list includes a description of applicable operations that may pose a pollutant risk, and inspection and documentation procedures to ensure control.

The MS4 permit requires No Exposure Certification for City-owned sites which are to be excluded from NPDES stormwater permitting. The City is assessing which City-owned sites can have a No Exposure Certification; those certifications will be included in the Stormwater Management Plan.

**4.6.D** The MS4 Operator shall maintain a list of industrial facilities the MS4 Operator owns or operates which are subject to NPDES permits for discharges of stormwater associated with industrial activity. The list shall include the permit number or a copy of the No Exposure Exemption Certification (if applicable) for each facility.

This includes; municipal projects with a land disturbance permit, wastewater facilities, airports, etc.

NPDES permitted facilities not owned or operated by the permittee are not required to be part of the list; however, the MS4 Operator should be familiar with all such facilities in their MS4 service area as they may signify a priority area for the IDDE program.

A list of all industrial facilities the MS4 Operator owns or operates which are subject to NPDES permits is in **Appendix 6-2**.

## **Floatables and Pollutants**

**4.6.E** The MS4 Operator shall develop or maintain controls for reducing or eliminating the discharge of floatables and

pollutants from municipal facilities listed in Section 4.6.D and 4.6.E.

These controls shall include at a minimum, where applicable:

1. A list of potential pollutant sources at each facility, such as materials used and stored on site;

**See Appendix 6-2 for the list of potential pollutant sources for each facility.**

2. A minimum of annual inspections of all municipally owned or operated facilities for stormwater issues;

a) Records shall be kept for inspections and follow up. This may be a checklist, and may be electronic;

**See Appendix 6-2 for the inspection frequencies and checklists.**

3. Use of structural controls/BMPs to reduce or prevent pollutants from entering waters of the state or into another MS4 where needed.

a) A map with descriptions of these BMPs shall be maintained for each facility;

**During 2022, the City will develop a map and inspection procedure for City-operated structural controls and BMPs.**

4. All paints, solvents, petroleum products, and petroleum waste products (except fuels) under the control of the permittee shall be stored so these materials are not exposed to stormwater;

**See Appendix 6-2 for the facilities which store these products. The table also lists how the products are stored so that they are not exposed to stormwater.**

5. Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spill of these pollutants from entering waters of the state;

a) This shall include spill kits when liquid product is stored at a facility; and

b) Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.

**Most paints, solvents, petroleum products, and petroleum waste products (except fuels) under the control of the City are stored so that these materials are not exposed to stormwater. The City facilities and operations that utilize these materials are indicated in Table 6.**

**Containment systems have been put in place for materials that are stored outside. As described in Table 6, the containment systems are checked on a weekly or monthly basis.**

**The City has fueling facilities. Above-ground fuel tanks are located at the police/fire complex, and at the power/water plant. All fuel tanks are protected from spills by secondary containment. A waste oil tank used by the fleet maintenance department also has a secondary containment vessel.**

**Spills of lubricants is minimized using indoor vehicle and equipment maintenance. When outdoor maintenance is required such as an on-street site, spill control absorbents are used.**

**See also 4.6.G.**

6. Tracking of rock salt/brine or other deicer usage;

**During 2022, the City will develop a salt and brine tracking system and compare application rate to industry standards to indicate adjustments.**

7. Maintaining municipal salt storage area(s) after use of rock salt, at minimum:

- a) Sweep and/or shovel spillage in loading area and storage area, and
- b) Unload salt hoppers or keep under cover when salt is in the hopper.

Salt maintenance information is included in the list of all municipal facilities located in **Appendix 6-2**.

## Disposal of Waste

**4.6.F** The MS4 Operator shall have procedures for proper disposal of waste removed from the MS4 structures and areas of jurisdiction.

This waste, shall include at minimum, if applicable to the permittee:

1. Street sweeper spoils and washout;
2. Accumulated sediment;
3. Dredged materials;
4. Floatables, trash and litter;
5. Leaves, other organic matter; and
6. Other debris.

Street sweeping spoils and other debris removed from MS4 structures is taken to the Jackson Transfer Station located at 2004 Lee Avenue to be taken to a certified landfill. Receipts are kept in order to track the quantity of debris removed each year.

## Vehicle Washing

**4.6.G** The MS4 Operator shall maintain and utilize the following procedures, at minimum, for the washing of all municipal vehicles and equipment (if applicable to the MS4):

1. Use of any soap or detergent shall only be where there is connection to sanitary sewer or equivalent treatment; and
2. Any wash or rinse water that contains pollutants such as salt, oils, grease, sediment, grass clippings, lawn chemicals, or pesticides shall not be discharged to waters of the state or the MS4 system without appropriate treatment.
3. Any washing or rinsing activities shall be conducted in an appropriate area so the water is treated. This area(s) shall be marked on the map of the facility.

As part of regular municipal operations maintenance, vehicle and equipment washing occurs at two sites – the city yard washing station and park maintenance building. At both locations, wash water drains to the sanitary sewer.

All City service vehicles such as garbage trucks, electrical system service vehicles, water system service vehicles, and wastewater system service vehicles including sludge hauling trucks, are stored inside.

## Procedures and Tracking

**4.6.H** The MS4 Operator shall maintain written explanation of the controls, procedures, inspection schedules, and explanation of tracking of these controls. Tracking may be done by retaining inspection reports or checklists.

Individual Stormwater Pollution Prevention Plans or one overarching Operations and Maintenance Manual for all applicable MS4 facilities may be used to comply with this requirement. If a unified document is used, each individual site shall be familiar with the document, and a copy shall be present on each site referenced in the document or available electronically. Annually, the MS4 Operator shall evaluate the results, controls, and inspection procedures to ensure compliance with these requirements and determine if changes are needed. This evaluation may also aid in finding priority areas or pollutants in relation to MCM 3, or adding more education in relation to MCM 1.

The controls, procedures, inspection schedules, and tracking of controls vary depending on the municipal site. **Appendix 6-2** includes information for each municipal site.

## Flood Management Projects

**4.6.I** The MS4 Operator shall maintain procedures to determine if there are impacts to water quality for new flood management projects, if applicable. Any flood management projects shall require 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.

The City has no planned flood management projects in the foreseeable future. If such projects are implemented, the City will assess the project for impacts to water quality and will incorporate water quality protection devices or practices.

## Current Program Evaluation

**4.6.J** **Existing permittees:** Shall evaluate the current Stormwater Management Program including training, inspection procedures, and other municipal operation procedures to ensure compliance with these requirements. Any changes necessary to be in compliance with this permit shall be completed within one (1) year of this permit issuance.

Changes to the training, inspection procedures, and municipal operations have been implemented as part of this SWMP to comply with the permit.

**4.6.K** **Newly regulated permittees:** Shall develop this program. The SWMP shall describe the pollution prevention/ good housekeeping plan and scheduled implementation. Development of this program shall be completed within the first five (5) years of the permit issuance.

Not applicable.

## Effectiveness Evaluation

**4.6.L** Using adaptive management, all MS4 Operators shall review their Municipal Operations Program, at minimum, annually and update implementation procedures as necessary within the permit requirement. Any additional BMPs shall be acknowledged in the Stormwater Management Program Report.

The Municipal Operations Program is reviewed annually. The MS4 Coordinator will compile the inspection reports for each site and note common issues discovered through those inspections. If an uptick in spills or other water quality threats are noted, the procedures and inspections will be re-evaluated to make them more effective.

## Appendix

### Appendix 1: MCM #1: Public Education and Outreach on Stormwater Impacts

- 1-1 Educational Material for Residents – Target Pollutant: Grass Clippings and Leaf Litter
- 1-2 Educational Material for General Contractors and Developers – Target Pollutant: Sediment/Mud

### Appendix 2: MCM #2: Public Involvement and Participation

- 2-1 Affidavit of Publication for Newspaper Posting
- 2-2 Meeting Minutes from February 17, 2021 Board of Alderman Regular Session
- 2-3 Agenda from the January 3, 2022 Board of Aldermen Meeting Study Session.
- 2-4 Website for Public Inquiries and Comments

### Appendix 3: MCM #3: Illicit Discharge Detection and Elimination

- 3-1 IDDE Flow Chart
- 3-2 Storm Sewer System Map
- 3-3 Outfall Table
- 3-4 City Ordinance Chapter 21 Article III. Storm Water Illicit Discharge Detection and Elimination
- 3-5 Priority Area Map
- 3-6 Illicit Discharge Field Investigation Checklist

### Appendix 4: MCM #4: Construction Site Stormwater Runoff Control

- 4-1 Site Inspection Flow Chart
- 4-2 Inspection Non-Compliance Flow Chart
- 4-3 City Ordinance Chapter 21 Article II. Site Development; Erosion Control
- 4-4 Grading Permit Application
- 4-5 Grading Permit Checklist
- 4-6 Construction Site Pollution Prevention Checklist
- 4-7 City Ordinance Chapter 1 Section 20

### Appendix 5: MCM #5: Post-Construction Stormwater Management in New Development and Redevelopment

- 5-1 City Ordinance Chapter 57 Section 10
- 5-2 City Ordinance Chapter 21 Section 109
- 5-3 City Ordinance Chapter 21 Section 43
- 5-4 Example Post-Construction BMP Checklist

### Appendix 6: MCM #6: Pollution Prevention/Good Housekeeping for Municipal Operations

- 6-1 Form for Tracking Employee Training
- 6-2 Pollution Prevention and Good Housekeeping for Municipal Operations by Facility

### Appendix 7: Annual Reports

- 7-1 2021 Annual Report

**Appendix 1-1**  
Educational Material for Residents  
Target Pollutant: Grass Clippings and Leaf Litter



# Environmental Fact Sheet

## RECYCLING GRASS CLIPPINGS

*Nationwide, State and local governments, lawn equipment manufacturers, lawn care professionals, and others are working to divert yard trimmings from municipal solid waste. The U.S. Environmental Protection Agency (EPA) recommends leaving grass clippings on lawns, rather than collecting and bagging them. Leaving grass clippings on the lawn (1) enhances the natural health of lawns by improving the soil and turf growth, and (2) reduces the amount of waste that must be collected and managed.*

### Clippings Enhance Your Lawn

EPA recommends leaving grass clippings on lawns to reduce the amount of waste that must be collected and managed and to enhance the natural health of lawns. As short grass clippings filter to the ground and naturally decompose, nutrients return to the soil and support further turf growth by supplying part of the lawn's fertilizer needs. This practice can save about one fertilizer application per year.

Grass clippings increase the soil's organic matter content, along with its ability to retain moisture and nutrients, to

resist erosion, and to maintain cooler temperatures during the summer.

The Texas A & M University System and the Texas Agricultural Extension report that clippings usually contain about four percent nitrogen, 0.5 percent phosphorous, and two percent potassium, as well as essential minor elements.\*

### Why Be Concerned About Grass Clippings?

Nationwide, state and local governments, lawn equipment manufacturers, lawn care professionals, and others are working to divert yard trimmings—including grass clippings, leaves, brush, and tree prunings—from municipal solid waste.

By mid 1995, 20 states will have banned landfill disposal of yard trimmings, the second largest component of the solid waste stream. Nationally, yard trimmings account for nearly 20 percent (over 31 million tons) of municipal solid waste generated each year. Grass clippings account for over half of all the yard trimmings generated.

The amount of yard trimmings generated varies considerably by region, season, and even from year to year. During peak months (primarily, summer and fall), yard trimmings can represent as much as 25 to 50 percent of municipal solid waste.



Recycled/Recyclable  
Printed with Soy/Canola Ink on paper that  
contains at least 50% recycled fiber

## Clippings and Thatch

Grass clippings do not cause thatch when left on lawns. Thatch, rather, is a layer of organic material comprised of grass roots, not the grass blade that is mowed. Grass roots contain lignin, a substance that is very slow to decompose and causes thatch. Grass clip-

pings, however, which are up to 90 percent water (wet weight) and contain little lignin, decompose quickly.

## Making the Switch

To foster healthy standing grass, do not cut more than one third of the blade off, and no more than one

inch total, at any one time (the exact mowing height depends on grass type and climate). In making the switch, participants in a Fort Worth, Texas, pilot project found that, since bagging the clippings was no longer necessary, they spent an average of 38 percent less time on each mowing.\*

## Looking For More Information on Yard Trimmings Management or Other Municipal Solid Waste Issues?

EPA's Office of Solid Waste offers a number of fact sheets and pamphlets on municipal solid waste management for citizens and community leaders. One such fact sheet, *Yard Waste Composting*, takes a general look at the whys, whats, and hows related to backyard composting.

Publications are available by contacting the RCRA Hotline, Monday through Friday, 8:30 a.m. to 7:30 p.m., EST, at **(800) 424-9346**. For the hearing impaired, the number is TDD **(800) 553-7672**. Or write to:

**RCRA Information Center (RIC)**  
**U.S. Environmental Protection Agency**  
**Office of Solid Waste (OS-305)**  
**401 M Street SW., Washington, DC 20460.**

Another EPA publication, ***Yard Waste Composting: A Study of Eight Programs***, is available for a fee from the National Technical Information Service (NTIS). To order, call **(703) 487-4650** and ask for publication number PB90-163 114.

## Yard Trimmings Management for Homeowners

EPA, in cooperation with the Colorado State University Cooperative Extension, developed a brochure on yard trimmings recycling/composting, entitled **"EASY" (Environmental Action Starts in your Yard)**. This brochure provides more detailed information on advantages of mulching, composting, and other beneficial home uses for yard trimmings. To receive a copy, write to:

**George Donnelly**  
**U.S. Environmental Protection Agency, Region 8**  
**999 18th Street**  
**Denver, CO 80202**



\* Dr. Bill Knoop, Texas Agricultural Extension Service. The Texas A & M University System, College Station, TX.

**Appendix 1-2**  
Educational Material for General Contractors and Developers  
Target Pollutant: Sediment/Mud

## Construction Checklist

When building a new home or adding on to your current home, there are a few important things to keep in mind. The following checklist will assist you in ensuring that the appropriate factors have been considered:

- Evaluate the Site:** Before construction begins, evaluate the entire site, mark for protection of any important trees and associated rooting zones, unique areas to be preserved, streams, wetlands, potential hydric soils, and vegetation suitable for filter strips, especially in perimeter areas. Remember to call the Tennessee One Call at 800-351-1111 48 hours before you dig.
- Install Perimeter Controls:** Identify the areas where sediment runoff could leave the construction site and install perimeter controls to minimize the potential for off-site sedimentation. This could include leaving a buffer strip, using silt fence, and protecting storm drain inlets.
- Build the Structures and Install Utilities:** Construct the home or addition and install utilities, including the sewage system and water well, if applicable.
- Maintain all erosion and sediment control measures:** Inspect at least once per week and after storm events. Maintain controls until construction is complete and lot is stabilized. Sweep or scrape any soil tracked onto roadways.
- Revegetate the Site:** Immediately after all outside activities are complete, stabilize the lot with seed, sod, or mulch. Redistribute the stockpiled soil, and spread to a depth of 4-6 inches over rough-graded areas. Spread mulch on newly seeded areas.
- Remove Remaining Temporary Control Measures:** Once the sod and/or vegetation is established, remove any temporary erosion and sediment control measures.

## Resources:

[www.knoxvilletn.gov/engineering](http://www.knoxvilletn.gov/engineering)

- Stormwater and Street Ordinance
- Land Development Manual
- BMP Manual - Includes detailed information for the following construction BMP's:
  - \* Stabilized Construction Entrance
  - \* Gradient Terraces & Surface Roughening
  - \* Topsoil & Mulch
  - \* Seeding & Sodding
  - \* Trees, Shrubs, & Vines
  - \* Erosion Control Matting & Geotextiles
  - \* Check Dams & Silt Fence
  - \* Straw Bale & Sandbag Barrier
  - \* Brush or Rock Filter Berm
  - \* Temporary Sediment Trap & Basin
  - \* Bank Stabilization & Soil Bioengineering
  - \* Diversions & Swales
  - \* Channel Linings, Gabions, & Riprap
  - \* Temporary Inlet & Outlet Protection
  - \* Level Spreader
  - \* Floating Sediment Curtain
- For additional information, please refer to the Tennessee Department of Environment & Conservation Erosion Prevention and Sediment Control Handbook at:  
[tnpsc.org/handbook.asp](http://tnpsc.org/handbook.asp)

Information for this brochure was taken in part from *Erosion Control for the Homebuilder* published by Summit SWCD, *Erosion and Sediment Control for Homebuilders* published by Lake SWCD, and

Please report illegal dumping or discharges in streams, ditches, catch basins, or streets to the City of Knoxville.

Report Water Pollution—Call 311.  
Anonymous calls are welcome.

### Goal Statement:

*"To provide professional engineering services to all city residents to protect their health, safety and welfare in an efficient, accountable, and responsive manner"*

Last Revision: 05/03/06

All services are provided without regard to race, religion, gender, age, physical or mental handicap, national origin or politics.

Example - Jackson specific handout is being created



CITY OF KNOXVILLE

# Erosion and Sediment Control

## A Guide for Lot Construction

**City of Knoxville  
Engineering  
Department**

City County Building  
400 Main Street  
Knoxville, TN 37902  
865-215-2148  
Fax: 865-215-2631

Report Water Pollution—Call 311  
[www.knoxvilletn.gov/engineering](http://www.knoxvilletn.gov/engineering)

## **Erosion and Sediment Control: The Key to Clean Water**

Sediment is the product of erosion and the #1 pollutant in Tennessee streams and rivers by volume. Construction and other earth disturbing activities can contribute large quantities of sediment to streams.

Sediment negatively impacts water quality by degrading the habitat of aquatic organisms and fish, impeding recreational opportunities, decreasing property value, and promoting the growth of weeds and algae. Sediment accumulation in ditches, streams, and lakes reduces their capacity, thereby increasing the chance of frequent flooding.

As a result of state and federal mandates, the City of Knoxville must regulate construction sites to ensure all sediment remains on-site. Whether or not an erosion & sediment control plan is required, **all property owners are required to comply** with the provisions outlined in the *Stormwater and Street Ordinance*. The homeowner is ultimately responsible if these measures are not properly in place.

This brochure provides abbreviated versions of Best Management Practices (BMPs) for individual lot construction to ensure that all necessary measures are taken to prevent erosion and protect sediment from leaving the site and entering waterways. Contact the City for a complete set of regulations.

**Storm  
water  
MATTERS!**

## **Best Management Practices for Individual Lot Construction**

*Correctly installed and maintained BMPs can help ensure that sediment generated from construction activity remains on-site. The following BMPs are commonly used for individual lot construction:*

### **Construction Entrance**

- Use to prevent tracking soil onto road
- Use 2"-3" stone
- Install during clearing phase and maintain throughout construction
- Install geotextile fabric under entrance



### **Sediment Barriers**

- Use to trap sediment and intercept runoff
- Install prior to clearing phase
- Ensure filter fabric or silt fence is installed correctly by entrenching a portion of it in the ground and place stakes downhill
- Maintain until vegetation is established
- Do not use on steep slopes or concentrated flow areas



### **Sediment Cleanup**

- At the end of each work day sweep or scrape soil tracked onto roads
- After storm events inspect for off-site sediment movement and repair damage to barriers
- Remove sediment that penetrated barriers and remove build-up
- Refer to IC-08 in BMP manual for proper pressure washing techniques



Visit [www.knoxvilletn.gov/engineering](http://www.knoxvilletn.gov/engineering) to view the City of Knoxville's BMP manual.

### **Rock Outlet Protection**

- Use to dissipate energy from concentrated flows
- Helps prevent eroded channels downstream
- Use oversized stone appropriate for design velocities
- Install geotextile fabric under riprap



### **Inlet Protection**

- Protect all storm water inlets- they are a direct conveyance to streams and rivers
- Install prior to clearing phase
- Filter fabric and temporary seeding are standard for inlet protection
- Must be inspected and maintained regularly



### **Stockpile Placement and Protection**

- Build stockpiles away from critical areas such as streams, drainage ways, and storm water inlets
- Use temporary seed, such as annual rye, to stabilize pile until removed or re-graded



### **Re-vegetation/Surface Protection**

- Use to stabilize exposed surfaces from erosion
- Use seed or sod to cover exposed soils after final grade is completed
- Seed critical areas such as drainage swales, right-of-way areas, areas near curb inlets, buffer areas along streams and wetlands
- Mulching can be used when temporary seeding is not practical and can be done in



**Appendix 2-1**  
Affidavit of Publication for Newspaper Posting



Serving Cape Girardeau County Since 1870

210 W. Main St. • P.O. Box 369 • Jackson, MO 63755

## AFFIDAVIT OF PUBLICATION

County of Cape Girardeau) ) SS.  
State of Missouri )

I, Gregory Dullum, being duly sworn according to law, state that I am the Editor/ Assistant Publisher of the Cash-Book Journal, a weekly newspaper of general circulation in the county of Cape Girardeau where located; which has been admitted to the Post Office as second-class matter in the City of Jackson, the city of publication; which newspaper has been published regularly and consecutively for a period of thirty-five years and has a list of bona fide subscribers voluntarily engaged as such who have paid or agreed to pay a stated price for subscription for a definite period of time, and that such newspaper has complied with the provisions of Section 493.050 Revised Statutes of Missouri, 2000. The affixed notice appeared in said newspaper on the following consecutive weeks (issues).

FROM January 27, 2021  
TO February 3, 2021  
FIRST INSERTION January 27, 2021  
SECOND INSERTION February 3, 2021  
THIRD INSERTION  
FOURTH INSERTION

By:

Gregory Lee Durst

Gregory Dullum  
Editor/Assistant Publisher

Subscribed and sworn to me this 3<sup>rd</sup> of February, 2021.

Ann L Rafferty, Notary Public.

Gina Raffety  
My commission expires December 11, 2021.  
Filed and recorded this 3<sup>rd</sup> of February, 2021.  
Publication fee- \$145.43

**CITY OF JACKSON  
PUBLIC HEARING NOTICE**

Notice is hereby given that the City of Jackson will hold a public hearing related to the draft Storm Water Management Plan (SWMP) of the Phase II Municipal Separate Storm Sewer System (MS4) Permit (MOR040000).

A public hearing has been scheduled for Wednesday, February 17, 2021, at 6:00 p.m. in the Board Room of City Hall at 101 Court Street. This meeting is open to the public and all interested persons may be present to state their views concerning this permit. Those unable to attend the hearing, but wishing to express an opinion may do so by having their written and signed opinion delivered to the City Clerk at City Hall, 101 Court Street, Jackson, MO 63755 by U.S. mail or hand delivery prior to the hearing.

To view the draft SWMP and for more information regarding this permit, please visit [www.jacksonmo.org/SWMP](http://www.jacksonmo.org/SWMP) or by contacting the coordinator.

Contact Information:  
Clint Brown, P.E.

CLINT BROWN, P.E.  
City Engineer  
101 Court St.

Jackson, MO 63775  
Phone: 573-243-2300

Email:  
cbrown@jacksonmo.org  
Jan. 27, Feb. 3, 2021

**Appendix 2-2**

Meeting Minutes from February 17, 2021 Board of Alderman Regular Session

**JOURNAL OF THE BOARD OF ALDERMEN  
CITY OF JACKSON, CAPE GIRARDEAU COUNTY, MISSOURI**



**WEDNESDAY, FEBRUARY 17, 2021 – REGULAR SESSION – 6:00 P.M.**

The Board of Aldermen met in the Regular Session with Mayor Dwain L. Hahs in the chair and the following Board Members present: Joe Bob Baker, Larry Cunningham, David Hitt, David Reiminger, Tommy Kimbel, Paul Sander, Kathleen Liley, and Wanda Young. Present-8; Absent-0.

The meeting is opened by Mayor Dwain L. Hahs with the Pledge of Allegiance and a Moment of Silent Prayer.

Mayor Dwain L. Hahs to recognize Guests      )  
And Visitors    )

Now comes forth, Mayor Dwain L. Hahs, to recognize guests and visitors.

Motion to Adopt the Agenda                            )

On a motion by Alderman Baker, duly seconded by Alderman Cunningham, to adopt the Agenda, as presented. Ayes-8; Nays-0; Absent-0.

Public Hearing to Satisfy the Latest              )  
Requirements of the State Mandated              )  
Municipal Separate Storm Sewer System        )  
(MS4) Permit which Focuses on the              )  
Management of Stormwater, as required by    )  
the Missouri Department of Natural            )  
Resources    )

Now comes forth, a Public Hearing to satisfy the latest requirements of the state mandated Municipal Separate Storm Sewer System (MS4) Permit which focuses on the management of stormwater, as required by the Missouri Department of Natural Resources.

All witnesses will be sworn in by City Clerk Liza Walker, prior to their testimony at this public hearing.

Now comes forth, Garry Aronberg of HR Green, Inc. at 16020 Swingley Ridge Road, Chesterfield, Missouri, to state that they are the Engineering Firm that worked with the City of Jackson to update the Stormwater Management Plan (SWMP) as part of the new regulations under the updated Municipal Separate Storm Sewer System (MS4) Permit and that he is available to answer any questions in regards to the new requirements under the MS4 Permit and the City of Jackson's revised SWMP. No questions were asked.

The Public Hearing is now closed by Mayor Hahs.

Public Hearing to Consider the Rezoning of )  
a 10.85 Acre Tract of Land located at the    )  
East End of Ridge Road, just East of Bent    )  
Creek Subdivision Phase 6, from R-2        )  
District to R-4 District, as submitted by    )  
Williams Brothers Contracting, LLC and    )  
BBratz, LLC                                    )

Now comes forth, a Public Hearing to consider the rezoning of a 10.85 acre tract

### **Appendix 2-3**

Agenda from the January 3, 2022 Board of Aldermen Meeting



**CITY OF JACKSON**  
**MAYOR & BOARD OF ALDERMEN STUDY SESSION**  
**Monday, January 03, 2022 at 6:30 PM**  
**Board Chambers, City Hall, 101 Court St.**

---

**AGENDA**

**DISCUSSION ITEMS**

1. Bid tabulation for the Hubble Ford Low Water Crossing Replacement Project - Smith & Co. Engineers
2. Discussion of a site for the Ridge Road Water Tower
3. Update on the Municipal Separate Storm Sewer System (MS4) Permit
4. Update and ballot schedule for the Wastewater System Facility Plan Implementation Project
5. Previously tabled items
6. Additional items (unspecified)

Posted on 12/30/21 at 04:00 PM.

**Appendix 2-4**  
Website for Public Inquiries and Comments



**Public Comment Submission Form on City Website**  
**(<http://www.jacksonmo.org/contact%20form.aspx>)**

*Welcome to Jackson,  
Missouri*

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Public Do

Public Notices

Public Meetings

Applications, Forms, and  
Specifications

Builders and Developers

City Licensing

City Maps

Court Information

Economic Development

Employment

Tax Rates

Utility Rates

Connect To...

**REMINDER: TO REPORT A CITY STREET/SERVICE/UTILITY PROBLEM THAT REQUIRES ATTENTION AFTER BUSINESS HOURS OR ON WEEKENDS, PLEASE CALL 573-243-2300. THIS PHONE NUMBER IS MONITORED 24-7. REQUESTS MADE THROUGH THIS FORM WILL BE HANDLED DURING BUSINESS HOURS (8 AM TO 5 PM, MONDAY THROUGH FRIDAY, EXCLUDING HOLIDAYS).**

**DEPARTMENT**

Accounts Payable



**News**



**Fall and Winter Hours Begin at the**

**Recycling Center on Novem...**

On November 1, the Jackson Recycling Center will begin its fall and winter hours of operation. [Read More](#)

**FIRST NAME**

**LAST NAME**

**EMAIL ADDRESS**

**DAY PHONE**

**PREFERRED METHOD OF CONTACT**

All News &amp; Events

[EMAIL](#)  
 [DAY PHONE](#)

**COMMENTS/QUESTIONS*****Calendar of Events*****28**  
Oct

**Municipal Court in Missouri Room, 100 North Missouri Street starting at 12 noon**

Pending Cases...[Read More](#)**28**  
Oct**Senior Social**Senior Social is held once a month and offers ...[Read More](#)**31**  
Oct**Halloween****31**  
Oct

**Recycling Center**  
Summer Hours End

[View Full Calendar](#)

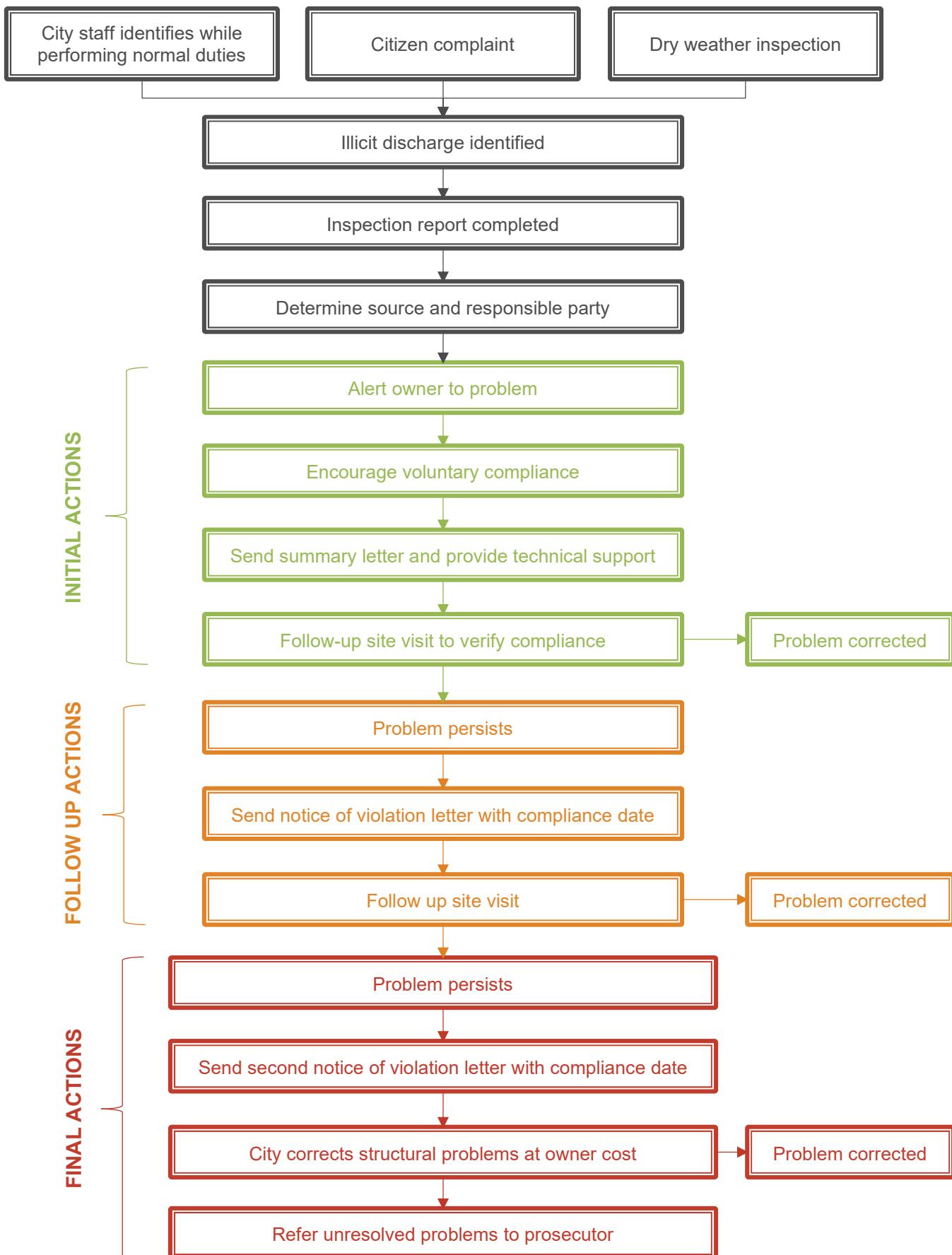
City of Jackson  
101 Court Street  
Jackson, MO 63755

**Phone:** (573) 243-3568Powered by [Element 74](#)**Business Operations**[City Administration](#): (573) 243-3568[City Clerk/Treasurer/Business Licensing](#): (573) 243-3568 ext. 2020[City Collector \(utility bills\)](#): (573) 243-4404 / (573) 243-3568 ext. 2024[Municipal Court](#): (573) 204-0618[Accounts Payable](#): (573) 243-3568 ext. 2012[Human Resources](#): (573) 243-3568 ext. 2021**City Services**[Public Works \(city utilities, street, building and planning, contractor licensing/permits, engineer\)](#): (573) 243-2300[Administrative Services \(citizen outreach\)](#): (573) 243-3568 ext. 2037**Public Safety**[Fire & Rescue](#): (573) 243-1010[Police Department](#): (573) 243-3151**Parks and Recreation Facilities**[Parks & Recreation](#): (573) 204-8848[City Swimming Pool](#) (seasonal phone): (573) 243-8343[Civic Center](#): (573) 204-8848**City Operations**[Solid Waste/Sanitation/Recycling](#): (573) 243-2333, (573) 243-5691[Power/Water Plant](#): (573) 243-3536[Electric Line](#): (573) 243-6373[Water Line/Distribution](#): (573) 243-5595[Wastewater Plant](#): (573) 243-4290[Street](#): (573) 243-2300[Cemetery](#): (573) 243-3651

Captcha Code



**Appendix 3-1**  
IDDE Flow Chart

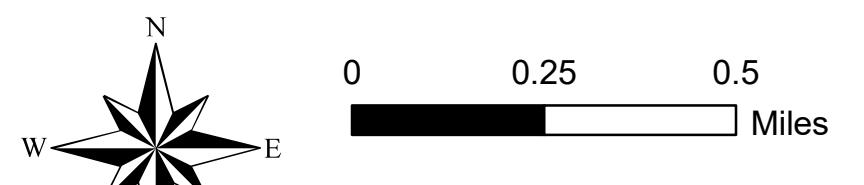


IDDE Flow Chart

**Appendix 3-2**  
Storm Sewer System Map

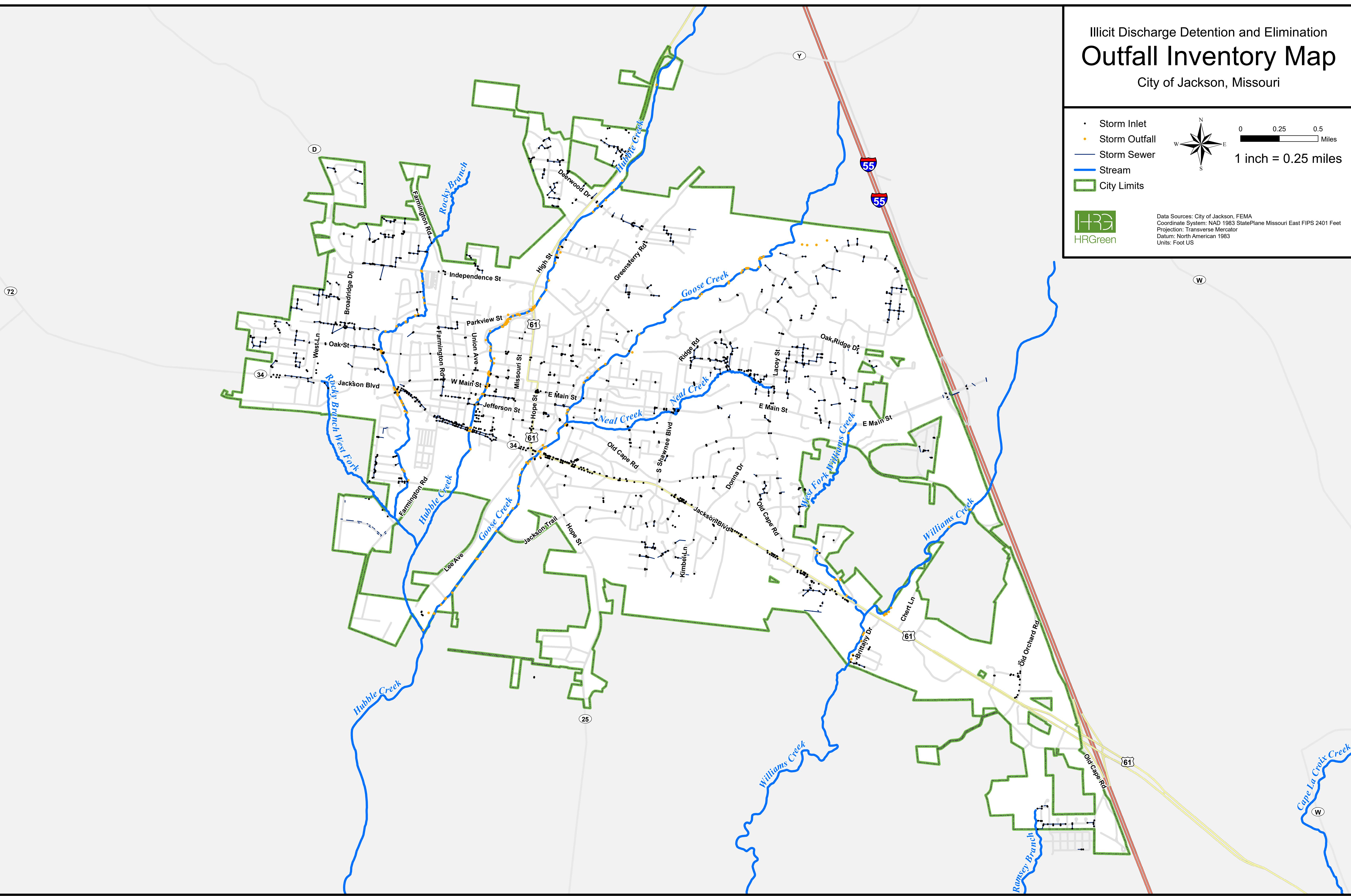
Illicit Discharge Detention and Elimination  
**Outfall Inventory Map**  
City of Jackson, Missouri

• Storm Inlet  
• Storm Outfall  
— Storm Sewer  
— Stream  
— City Limits



HRG  
HRGreen

Data Sources: City of Jackson, FEMA  
Coordinate System: NAD 1983 StatePlane Missouri East FIPS 2401 Feet  
Projection: Transverse Mercator  
Datum: North American 1983  
Units: Foot US



**Appendix 3-3**  
Outfall Table

Number	Date Entered	Date of Last Inspection	Time	Location	Closest Address	Width	Height	Material	StructCond	Flow	Odor	Appearance	Floatables	Vegetation	Biological	PH	Conductivity	Turbidity	RipRap	Comments	StructType	Creek
01	3/28/2013			wwsw				RR										YES			HUBB	
02	3/28/2013			Goose		12	12	RCP	Good												Outfall	Goose
03	3/28/2013			Goose		30	30	DI	GOOD												OUTFALL	Goose
04	3/28/2013			Goose		6	6	POLY	FAIR												OUTFALL	Goose
05	3/28/2013			Goose														NO	FARM IRRIGATION OUTLET		OUTFALL	Goose
07	3/28/2013			Goose		15	15	POLY	GOOD									NO			OUTFALL	Goose
08	3/28/2013			Goose					CONCRETE									NO			CONCRETE ROAD	Goose
09	3/28/2013			Goose		7.5	7.5	POLY	GOOD									NO	GREEN POLY		OUTFALL	Goose
10	3/28/2013			Goose		6	6	POLY	GOOD										GREEN POLY SEWER PIPE		OUTFALL	Goose
11	3/28/2013			Goose														NO	POTTERY LOT OUTFALL		OUTFALL	Goose
12	3/28/2013			Goose		8	8	CMP	FAIR									NO			OUTFALL	Goose
13	3/28/2013			Goose		24	24	RCP	GOOD									NO	THERE ARE TWO 24 in RCP PIPES TOGETHER		OUTFALL	Goose
14	3/28/2013			Goose														YES	FARM IRRIGATION RIPRAP		OUTFALL	Goose
06	3/28/2013			South of bridge														NO	CHANNEL FLOWS FROM WEST SIDE OF RUBBERMAID		OPEN CHANNEL	Goose
16	3/28/2013			Goose RUBBERMAID		24	24	RCP	GOOD									NO			OUTFALL	Goose
17	3/28/2013			Goose RUBBERMAID		24	24	RCP	GOOD									NO			OUTFALL	Goose
15	3/28/2013			Goose RUBBERMAID		24	24	CMP	GOOD									NO			OUTFALL	
18	3/28/2013			Goose		6	6	CMP	FAIR									NO			OUTFALL	Goose RUBBERMAID
19	3/28/2013			Goose		30	30	CMP	GOOD									NO			OUTFALL	Goose
20	4/1/2013			Goose		24	24	RCP	GOOD									NO			OUTFALL	Goose
21	4/1/2013			Goose		30	30	RCP	GOOD									NO			OUTFALL	Goose
22	4/1/2013			Goose		12	12	CMP	GOOD									NO			OUTFALL	Goose
23	4/1/2013			Goose		17	17	RCP	GOOD									NO			OUTFALL	Goose
24	4/1/2013			Goose		8	8	CMP	GOOD									NO			OUTFALL	Goose
25	4/1/2013			Goose		12	12	CMP	GOOD									NO			OUTFALL	Goose
26	4/1/2013			Goose Countrymart		24	24	RCP	GOOD									NO			OUTFALL	
27	4/1/2013			Goose Countrymart		40	40	RCP	GOOD									NO			OUTFALL	Goose
28	4/1/2013			Goose		52	52	RCP	GOOD									NO			OUTFALL	Goose
29	4/1/2013			Goose		28	28	RCP	GOOD									NO			OUTFALL	Goose
30	4/1/2013			Goose		12	12	CMP	POOR									NO			OUTFALL	Goose
31	4/1/2013			Goose KIDD'S														YES			OUTFALL	Goose
32	4/1/2013			Goose KIDD'S														YES			OUTFALL	Goose
33	4/1/2013					17	17	RCP	GOOD									NO			OUTFALL	Goose
34	4/1/2013			Goose		24	24	RCP	Goose												OUTFALL	Goose
35	4/1/2013			Goose		24	24	RCP	GOOD									NO			OUTFALL	Goose
36	4/1/2013			Goose		8	8	?	POOR									NO			OUTFALL	Goose
37	4/1/2013			Goose		12	12	CMP	FAIR									NO			OUTFALL	Goose
38	4/1/2013			Goose		30	30	CMP	GOOD									NO			OUTFALL	Goose
39	4/1/2013			Goose		10	10	?	POOR									NO			OUTFALL	Goose

40	4/1/2013			Goose		24	24	RCP	FAIR											NO			OUTFALL	Goose
41	4/1/2013			Goose		24	24	CMP	FAIR											NO			OUTFALL	Goose
42	4/1/2013			Goose		36	36	CMP	FAIR											NO			OUTFALL	Goose
43	4/1/2013			Goose		6	6	POLY	GOOD											NO			OUTFALL	Goose
44	4/1/2013			Goose LITZ PARK				RC	GOOD											NO			OUTFALL	Goose
45	4/1/2013			Goose		24	24	CMP	POOR											NO			OUTFALL	Goose
46	4/2/2013			Goose																YES			OUTFALL	Goose
47	4/2/2013			Goose																YES			OUTFALL	Goose
48	4/2/2013			Goose Golf Course		4	4	POLY	GOOD											NO			OUTFALL	Goose
49	4/2/2013			Goose Golf Course		4	4	POLY	FAIR											NO			OUTFALL	Goose
50	4/2/2013			Goose Golf Course		12	12	CMP	FAIR											NO			OUTFALL	Goose
51	4/2/2013			Goose Golf Course		4	4	POLY	GOOD											NO			OUTFALL	Goose
52	4/2/2013			Goose Golf Course		12	12	CMP	GOOD											NO			OUTFALL	Goose
53	4/2/2013			Goose Golf Course		4	4	POLY	FAIR											NO			OUTFALL	Goose
54	4/2/2013			Goose Golf Course		4	4	POLY	GOOD											NO			OUTFALL	Goose
55	4/2/2013			Goose Golf Course		6	6	CMP	FAIR											NO			OUTFALL	Goose
56	4/2/2013			Goose Golf Course		2	2	POLY	GOOD														OUTFALL	Goose
57	4/2/2013			Goose Golf Course		6	6	POLY	GOOD											NO			OUTFALL	Goose
58	4/2/2013			Goose Golf Course		4	4	POLY	GOOD											NO			OUTFALL	Goose
59	4/2/2013			Goose Golf Course		4	4	POLY	GOOD											NO			OUTFALL	Goose
60	4/2/2013			Goose Golf Course		12	12	CMP	FAIR											NO			OUTFALL	Goose
61	4/2/2013			Goose Golf Course		4	4	POLY	GOOD											NO			OUTFALL	Goose
62	4/2/2013			Goose Golf Course		36	36	CMP	GOOD											NO			OUTFALL	Goose
63	4/2/2013			Goose Golf Course		6	6	POLY	GOOD											NO			OUTFALL	Goose
64	4/2/2013			Goose Golf Course		6	6	CMP	GOOD											NO			OUTFALL	Goose
65	4/2/2013			Goose Golf Course		36	36	MP	FAIR											NO			OUTFALL	Goose
66	4/3/2013			HUBBLE		24	24	CMP	GOOD											NO			OUTFALL	HUBLE
67	4/3/2013			HUBBLE		18	18	RCP	GOOD											NO			OUTFALL	HUMBLE
68	4/3/2013			HUBBLE		18	18	RCP	GOOD											NO			OUTFALL	HUBLE
69	4/3/2013			HUBBLE		36	36	RCP	GOOD											NO			OUTFALL	HUBLE
70	4/3/2013			HUBBLE																YES			OUTFALL	HUBLE
71	4/3/2013			HUBBLE		24	24	RCP	GOOD											NO			OUTFALL	HUBLE
72	4/3/2013			HUBBLE		48	48	RCP	GOOD											NO			OUTFALL	HUBLE
73	4/3/2013			HUBBLE		36	36	RCP	GOOD											NO			OUTFALL	HUBLE
74	4/3/2013			HUBBLE		30	30	RCP	GOOD											NO			OUTFALL	HUBLE
75	4/3/2013			HUBBLE		34	34	RCP	GOOD											NO			OUTFALL	HUBLE
76	4/3/2013			HUBBLE		24	24	RCP	GOOD											YES			OUTFALL	HUBLE
77	4/3/2013			HUBBLE		36	36	RCP	GOOD											NO			OUTFALL	HUBLE
78	4/3/2013			HUBBLE		24	24	RCP	GOOD											NO			OUTFALL	HUBLE
79	4/3/2013			HUBBLE ESTES BBQ																YES			OUTFALL	HUMBLE

80	4/3/2013			HUBBLE HEALTHPOINT		8	8	POLY	GOOD											NO			OUTFALL	HUBMBLE
81	4/3/2013			HUBBLE HEALTHPOINT																YES			OUTFALL	HUBBLE
82	4/3/2013			HUBBLE HEALTHPOINT		24	24	CMP	GOOD											NO			OUTFALL	HUBBLE
83	4/3/2013			HUBBLE HEALTHPOINT		6	6	POLY	GOOD											NO			OUTFALL	HUBBLE
84	4/3/2013			HUBBLE		12	12	CMP	GOOD											NO			OUTFALL	HUBBLE
85	4/3/2013			HUBBLE UNDER BRIDGE		15	15	CMP	GOOD											NO			OUTFALL	HUBBLE
86	4/3/2013			HUBBLE		4	4	POLY	GOOD											NO			OUTFALL	HUBBLE
87	4/3/2013			HUBBLE		6	6	POLY	GOOD											NO			POLY	HUBBLE
88	4/3/2013			HUBBLE UNDER BRIDGE		14	14	POLY	GOOD											NO			OUTFALL	HUBBLE
89	4/3/2013			HUBBLE		6	6	POLY	GOOD											NO			OUTFALL	HUBBLE
90	4/3/2013			HUBBLE		36	36	RCP	GOOD											NO			OUTFALL	HUBBLE
91	4/3/2013			HUBBLE																YES			OUTFALL	HUBBLE
92	4/3/2013			HUBBLE		24	24	RCP	GOOD											NO			OUTFALL	HUBBLE
93	4/3/2013			HUBBLE		36	36	RCP	GOOD											NO			OUTFALL	HUBBLE
94	4/3/2013			HUBBLE																YES			OUTFALL	HUBBLE
96	4/4/2013			HUBBLE CITY PARK		6	6	MP	FAIR											NO			OUTFALL	HUBBLE
95	4/4/2013			HUBBLE CITY PARK																YES			OUTFALL	HUBBLE
97	4/4/2013			HUBBLE CITY PARK																YES			OUTFALL	HUBBLE
98	4/4/2013			HUBBLE CITY PARK																YES			OUTFALL	HUBBLE
99	4/4/2013			HUBBLE CITY PARK																YES			OUTFALL	HUBBLE
100	4/4/2013			HUBBLE CITY PARK		4	4	CLAY	FAIR											NO			OUTFALL	HUBBLE
101	4/4/2013			HUBBLE CITY PARK		6	6	CLAY	FAIR											NO			OUTFALL	HUBBLE CITY PARK
102	4/4/2013			HUBBLE CITY PARK		3	3	POLY	GOOD											NO			OUTFALL	HUBBLE
103	4/4/2013			HUBBLE CITY PARK		3	3	POLY	GOOD											NO			OUTFALL	HUBBLE
104	4/4/2013			HUBBLE CITY PARK		4	4	POLY	POOR											NO			OUTFALL	HUBBLE
105	4/4/2013			HUBBLE CITY PARK		3	3	POLY	FAIR											NO			OUTFALL	HUBBLE
106	4/4/2013			HUBBLE CITY PARK		3	3	POLY	FAIR											NO			OUTFALL	HUBBLE
107	4/4/2013			HUBBLE CITY PARK		3	3	POLY	POOR											NO			OUTFALL	HUBBLE
108	4/4/2013			HUBBLE CITY PARK		4	4	CLAY	FAIR											NO			OUTFALL	HUBBLE
109	4/4/2013			HUBBLE CITY PARK		3	3	POLY	FAIR											NO			OUTFALL	HUBBLE
110	4/4/2013			HUMBLE CITY PARK		3	3	POLY	FAIR											NO			OUTFALL	HUMBLE
111	4/4/2013			HUBBLE CITY PARK																YES			OUTFALL	HUBBLE
112	4/4/2013			HUBBLE CITY PARK		3	3	POLY	FAIR											NO			OUTFALL	HUBBLE
113	4/4/2013			HUBBLE CITY PARK		3	3	POLY	FAIR											NO			OUTFALL	HUBBLE
114	4/4/2013			HUBBLE CITY PARK		3	3	POLY	FAIR											NO			OUTFALL	HUBBLE
115	4/4/2013			HUBBLE CITY PARK		24	24	RCP	GOOD											NO			OUTFALL	HUMBLE
116	4/5/2013			HUBBLE CITY PARK		18	18	CLAY	FAIR											NO			OUTFALL	HUBBLE
117	4/5/2013			HUBBLE CITY PARK																YES			OUTFALL	HUBBLE
118	4/5/2013			HUMBLE CITY PARK		3	3	POLY	POOR											NO			OUTFALL	HUBBLE
119	4/5/2013			HUBBLE CITY PARK		18	18	CLAY	GOOD											NO			OUTFALL	HUBBLE

120	4/5/2013			HUBBLE CITY PARK														YES			OUTFALL	HUBBLE
121	4/5/2013			HUBBLE CITY PARK		6	6	CLAY	FAIR									NO			OUTFALL	HUBBLE
122	4/5/2013			HUBBLE CITY PARK		8	8	CLAY	POOR									NO			OUTFALL	HUBBLE
123	4/5/2013			HUBBLE CITY PARK		6	6	CLAY	FAIR									NO			OUTFALL	HUBBLE
124	4/5/2013			HUBBLE CITY PARK														YES			OUTFALL	HUBBLE
125	4/5/2013			HUBBLE CITY PARK		18	18	CLAY	FAIR									NO			OUTFALL	HUBBLE
126	4/5/2013			HUBBLE CITY PARK														NO			OUTFALL	HUBBLE
127	4/5/2013			HUBBLE CITY														NO			OUTFALL	HUBBLE
128	4/5/2013			HUBBLE 61 BRIDGE														YES			OUTFALL	HUBBLE
129	4/5/2013			HUBBLE CITY PARK 61 BRIDGE		15	15	RCP	GOOD									NO			OUTFALL	HUBBLE
130	4/5/2013			HUBBLE CITY PARK 61 BRIDGE		12	12	CMP	GOOD									NO			OUTFALL	HUBBLE
131	4/5/2013			HUBBLE														YES			OUTFALL	HUBBLE
132	4/5/2013			HUBBLE														YES			OUTFALL	HUBBLE
133	4/5/2013			HUBBLE														YES			OUTFALL	HUBBLE
134	4/5/2013			HUBBLE														YES			OUTFALL	HUBBLE
135	4/5/2013			HUBBLE														NO			OUTFALL	HUBBLE
136	4/8/2013			HUBBLE 61 HIGHWAY		18	18	POLY	GOOD									NO			OUTFALL	HUBBLE
137	4/8/2013			HUBBLE 61 HIGHWAY		18	18	POLY	GOOD									NO			OUTFALL	HUBBLE
138	4/8/2013			HUBBLE BROOKSTONE ST		15	15	CMP	GOOD									NO			OUTFALL	HUBBLE
139	4/8/2013			HUBBLE		24	24	RCP	GOOD									NO			OUTFALL	HUBBLE
140	4/8/2013			HUBBLE														YES			OUTFALL	HUBBLE
141	4/8/2013			HUBBLE														YES			OUTFALL	HUBBLE
142	4/8/2013			HUBBLE		12	12	POLY	GOOD									NO			OUTFALL	HUBBLE
143	4/8/2013			HUBBLE		4	4	POLY	GOOD									NO			OUTFALL	HUBBLE
144	4/8/2013			HUBBLE		4	4	POLY	FAIR									NO			OUTFALL	HUBBLE
145	4/9/2013			WILLIAMS		36	36	CMP	GOOD									NO			OUTFALL	WILLIAMS
146	4/9/2013			WILLIAMS		4	4	POLY	GOOD									NO			OUTFALL	WILLIAMS
147	4/9/2013			WILLIAMS		36	36	CMP	GOOD									NO			OUTFALL	WILLIAMS
148	4/9/2013			WILLIAMS		36	36	CMP	POOR									NO			OUTFALL	WILLIAMS
149	4/9/2013			WILLIAMS		4	4	POLY	POOR									NO			OUTFALL	WILLIAMS
150	4/9/2013			WILLIAMS		4	4	POLY	GOOD									NO			OUTFALL	WILLIAMS
151	4/9/2013			WILLIAMS		4	4	POLY	GOOD									NO			OUTFALL	WILLIAMS
152	4/9/2013			WILLIAMS		8	8	POLY	GOOD									NO			OUTFALL	WILLIAMS
153	4/9/2013			WILLIAMS RHODES GAS STATION		4	4	POLY	GOOD									NO			OUTFALL	WILLIAMS
154	4/9/2013			WILLIAMS RHODES GAS STATION		4	4	POLY	FAIR									NO			OUTFALL	WILLIAMS
155	4/9/2013			WILLIAMS RHODES GAS STATION		16	16	RCP	GOOD									NO			OUTFALL	WILLIAMS
156	4/9/2013			WILLIAMS RHODES GAS STATION		4	4	POLY	GOOD									NO			OUTFALL	WILLIAMS
157	4/9/2013			WILLIAMS														YES			OUTFALL	WILLIAMS
158	4/9/2013			WILLIAMS		8	8	POLY	GOOD									NO			OUTFALL	WILLIAMS
159	4/9/2013			WILLIAMS OLD ORCHARD RD														YES			OUTFALL	WILLIAMS

160	4/12/2013			ROCKY JACKSON RIDGE		12	12	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
161	4/12/2013			ROCKY BRANCH		24	24	RCP	GOOD											NO			OUTFALL	ROCKY BRANCH
162	4/12/2013			ROCKY BRANCH		14	14	RCP	GOOD											NO			OUTFALL	ROCKY BRANCH
163	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
164	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
165	4/12/2013			ROCKY BRANCH		6	6	POLY	FAIR											NO			OUTFALL	ROCKY BRANCH
166	4/12/2013			ROCKY BRANCH		24	24	RCP	GOOD											NO			OUTFALL	ROCKY BRANCH
167	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
168	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
169	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
170	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
171	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
173	4/12/2013			ROCKY BRANCH		18	18	RCP	GOOD											NO			OUTFALL	ROCKY BRANCH
174	4/12/2013			ROCKY BRANCH		18	18	RCP	GOOD											NO			OUTFALL	ROCKY BRANCH
175	4/12/2013			WESTBROOK ST																YES			OUTFALL	ROCKY BRANCH
176	4/12/2013			WESTBROOK ST																YES			OUTFALL	ROCKY BRANCH
177	4/12/2013			WESTBROOK STT		24	24	RCP	POOR											NO			OUTFALL	ROCKY BRANCH
178	4/12/2013			CATHY ST		12	12	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
179	4/12/2013			JACKSON BLVD		24	24	RCP	GOOD											NO			OUTFALL	ROCKY BRANCH
180	4/12/2013			ROCKY BRANCH																YES			OUTFALL	ROCKY BRANCH
181	4/12/2013			ROCKY BRANCH		24	24	CMP	GOOD											NO			OUTFALL	ROCKY BRANCH
182	4/12/2013			ROCKY BRANCH		18	18	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
183	4/12/2013			ROCKY BRANCH		28	28	CMP	GOOD											NO	24 LOCATED UNDER BRIDGE		OUTFALL	ROCKY BRANCH
184	4/12/2013			OAK ST																YES			OUTFALL	ROCKY BRANCH
185	4/12/2013			ROCKY BRANCH																YES			OUTFALL	ROCKY BRANCH
186	4/12/2013			ROCKY BRANCH																YES			OUTFALL	ROCKY BRANCH
187	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
188	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
189	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
190	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
191	4/12/2013			ROCKY BRANCH		24	24	RCP	FAIR											NO			OUTFALL	ROCKY BRANCH
192	4/12/2013			ROCKY BRANCH		4	4	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
193	4/12/2013			ROCKY BRANCH		3	3	POLY	GOOD											NO			OUTFALL	ROCKY BRANCH
194	4/12/2013			ROCKY BRANCH		24	24	RCP	POOR											NO			OUTFALL	ROCKY BRANCH
195	4/12/2013			ROCKY BRANCH		12	12	RCP	GOOD											NO			OUTFALL	ROCKY BRANCH
196	4/12/2013			ROCKY BRANCH		12	12	RCP	GOOD											NO	37 UNDER BRIDGE		OUTFALL	ROCKY BRANCH
197	4/15/2013			NEAL		8	8	POLY	POOR											NO			OUTFALL	NEAL
198	4/15/2013			NEAL		40	30	CMP	FAIR											NO			OUTFALL	NEAL
199	4/15/2013			NEAL		4	4	POLY	GOOD											NO			OUTFALL	NEAL
200	4/15/2013			NEAL		4	4	POLY	GOOD											NO			OUTFALL	NEAL

201	4/15/2013			NEAL													YES		OUTFALL	NEAL
202	4/15/2013			NEAL		4	4	POLY	GOOD								NO		OUTFALL	NEAL
203	4/15/2013			NEAL		2	2	POLY	FAIR								NO		OUTFALL	NEAL

### **Appendix 3-4**

City Ordinance Chapter 21 Article III. Storm Water Illicit Discharge Detection and Elimination

## ARTICLE III. STORM WATER ILLICIT DISCHARGE DETECTION AND ELIMINATION

### Sec. 21-100. Purpose/intent.

The purpose of this article is to provide for the health, safety and general welfare of the citizens of the city through the regulation of nonstorm water discharges to the storm drainage system to the extent practicable as required by federal and state law. This article establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this article are:

- (1) To regulate the contribution of pollutants to the MS4 by storm water discharges by any user.
- (2) To prohibit illicit connections and discharges to the MS4.
- (3) To establish legal authority to carry out all inspection, surveillance, monitoring and enforcement procedures necessary to ensure compliance with this article.

(Ord. No. 10-44, § 1, 5-3-10)

### Sec. 21-101. Definitions.

For the purposes of this article, the following words and phrases shall have the meanings respectively ascribed to them by this section:

*Authorized enforcement agency.* Employees or designees of the director of public works.

*Best management practices (BMPs).* Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters or storm water conveyance systems. BMPs also include treatment practices, operating procedures and practices to control site runoff, spillage or leaks, sludge or water disposal or drainage from raw materials storage.

*Clean Water Act.* The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) and any subsequent amendments thereto.

*Construction activity.* Activities subject to NPDES construction permits, city building permits, excavation or grading permits. These include, but are not limited to, construction projects resulting in land disturbance of one (1) acre or more in area or five hundred (500) cubic yards of excavation in volume. Such activities include, but are not limited to, clearing and grubbing, grading, excavating and demolition.

*Hazardous materials.* Any material, including any substance, waste or combination thereof, which because of its quantity, concentration or physical, chemical or infectious characteristics may cause or significantly contribute to a substantial present or potential hazard to human health, safety, property or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

*Illegal discharge.* Any direct or indirect non-storm water discharge to the storm drainage system except as exempted in this article.

*Illicit connections.* An illicit connection is defined as either of the following:

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- (1) Any drain or conveyance, whether on the surface or subsurface, that allows an illegal discharge to enter the storm drainage system including, but not limited to, any conveyances that allow any nonstorm water discharge including sewage, process wastewater and wash water to enter the storm drainage system and any connections to the storm drainage system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted or approved by an authorized enforcement agency; or
- (2) Any drain or conveyance connected from a commercial or industrial land use to the storm drainage system that has not been documented in plans, maps or equivalent records and approved by an authorized enforcement agency.

*Industrial activity.* Activities subject to NPDES industrial storm water permits as defined in 40 CFR, Section 122.26(b)(14).

*Municipal separate storm sewer system (MS4).* The system of conveyances (including sidewalks, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains) owned and operated by the city and designed or used for collecting or conveying storm water and that is not used for collecting or conveying sewage.

*National Pollutant Discharge Elimination System (NPDES) storm water discharge permit.* A permit issued by EPA [or by a state under authority delegated pursuant to 33 U.S.C. § 1342(b)] that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group or general area-wide basis.

*Nonstorm water discharge.* Any discharge to the storm drainage system that is not composed entirely of storm water.

*Person.* Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

*Pollutant.* Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: Paints, varnishes and solvents; oil and other automotive fluids; nonhazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter or other discarded or abandoned objects, ordnances and accumulations so that same may cause or contribute to pollution; floatables; pesticides, herbicides and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

*Premises.* Any building, lot, parcel of land or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

*Storm drainage system.* Publicly-owned facilities by which storm water is collected and/or conveyed including, but not limited to, any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs and other drainage structures.

*Storm water.* Any surface flow, runoff and drainage consisting entirely of water from any form of natural precipitation and resulting from such precipitation.

*Storm water management plan.* A document which describes the best management practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to storm water, storm water conveyance systems and/or receiving waters to the maximum extent practicable.

*Wastewater.* Any water or other liquid, other than uncontaminated storm water, discharged from a facility.

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**Watercourse.** Any channel or swale capable of conducting generally confined runoff from adjacent lands. During floods water may leave the confining beds and banks but under low and normal flows water is confined within the channel. A watercourse may be perennial or intermittent.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-102. Applicability.**

This article shall apply to all water entering the storm drainage system generated on any developed and undeveloped lands unless specifically exempted by ordinance, state statute or federal law.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-103. Responsibility for administration.**

The public works department of the city shall administer, implement and enforce the provisions of this article. Any powers granted or duties imposed upon the public works department may be delegated in writing by the director of the public works department to persons or entities acting in the beneficial interest of or in the employ of the city.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-104. Compatibility with other regulations.**

This article is not intended to modify or repeal any other ordinance, rule, regulation or other provision of law. The requirements of this article are in addition to the requirements of any other ordinance, rule, regulation or other provision of law. Where any provision of this article imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-105. Severability.**

The provisions of this article are hereby declared to be severable. If any provision, clause, sentence or paragraph of this article or the application thereof to any person, establishment or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this article.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-106. Ultimate responsibility.**

The standards set forth herein and promulgated pursuant to this article are minimum standards; therefore, this article does not intend or imply that compliance by any person will ensure that there will be no contamination, pollution or unauthorized discharge of pollutants nor does this article shift any responsibility or duty to the city.

(Ord. No. 10-44, § 1, 5-3-10)

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## **Sec. 21-107. Prohibition of illegal discharges.**

- (a) No person shall throw, drain or otherwise discharge, cause or allow others under its control to throw, drain or otherwise discharge into the MS4 any pollutants or waters containing any pollutants other than storm water.
- (b) The commencement, conduct or continuance of any illegal discharge to the storm drainage system is prohibited except as described as follows:
  - (1) The following discharges are exempt from discharge prohibitions established by this article: water line flushing, landscape irrigation, diverted stream flows, rising groundwaters, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, noncommercial car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges and street wash water.
  - (2) Discharges or flow from firefighting and other discharges specified in writing by the public works department as being necessary to protect public health and safety.
  - (3) Discharges associated with dye testing; however, this activity requires a verbal notification to the public works department prior to the time of the test.
  - (4) The prohibition shall not apply to any nonstorm water discharge permitted under an NPDES permit, waiver or waste discharge order issued to the discharger and administered under the authority of the United States Environmental Protection Agency (EPA), provided that the discharger is in full compliance with all requirements of the permit, waiver or order and other applicable laws and regulations and provided that written approval has been granted for any discharge to the storm drainage system.

(Ord. No. 10-44, § 1, 5-3-10)

## **Sec. 21-108. Prohibition of illicit connections.**

- (a) The construction, use, maintenance or continued existence of illicit connections to the storm drainage system is prohibited.
- (b) This prohibition may include illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection if such connection is discharging hazardous materials.
- (c) A person is considered to be in violation of this article if the person connects a line conveying sewage to the MS4 or allows such a connection to continue.
- (d) Improper connections in violation of this article must be disconnected and redirected, if necessary, to an approved onsite wastewater management system or the sanitary sewer system upon approval of the public works department.
- (e) Any drain or conveyance that has not been documented in plans, maps or equivalent and which may be connected to the storm sewer system shall be located by the owner or occupant of that property upon receipt of written notice of violation from the public works department requiring that such locating be completed. Such notice will specify a reasonable time period within which the location of the drain or conveyance is to be determined, that the drain or conveyance be identified as storm sewer, sanitary sewer or other and that the outfall location or point of connection to the storm sewer system, sanitary sewer system or other discharge point be identified. Results of these investigations are to be documented and provided to the public works department.

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(Ord. No. 10-44, § 1, 5-3-10)

**Sec. 21-109. Watercourse protection.**

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation and other obstacles that would pollute, contaminate or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse so that such structures will not become a hazard to the use, function or physical integrity of the watercourse.

(Ord. No. 10-44, § 1, 5-3-10)

**Sec. 21-110. Industrial or construction submission of notice of intent (NOI).**

- (a) Any person subject to an industrial or construction activity NPDES storm water discharge permit, grading permit or land disturbance permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the public works department prior to the allowing of discharges to the MS4.
- (b) The operator of a facility, including construction sites, required to have an NPDES permit, construction permit, grading permit or land disturbance permit to discharge storm water associated with industrial activity shall submit a copy of the notice of intent (NOI) to the public works department at the same time the operator submits the original notice of intent to the EPA or Missouri Department of Natural Resources (MDNR) as applicable.
- (c) The copy of the notice of intent may be delivered to the public works department either in person or by mailing it to:

Notice of Intent to Discharge Storm Water  
Public Works Department  
101 Court Street  
Jackson, MO 63755

- (d) A person commits an offense if the person operates a facility that is discharging storm water associated with industrial activity without having submitted a copy of the notice of intent to do so to the public works department.

(Ord. No. 10-44, § 1, 5-3-10)

**Sec. 21-111. Right of entry, inspection and sampling.**

- (a) The public works department shall be permitted to enter and inspect facilities subject to regulation under this article as often as may be necessary to determine compliance with this article.
- (b) If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the public works department.
- (c) Facility operators shall allow the public works department ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the

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conditions of an NPDES permit, construction permit, excavation or grading permit to discharge storm water and the performance of any additional duties as defined by state and federal law.

- (d) The public works department shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the public works department to conduct monitoring and/or sampling of the facility's storm water discharge.
- (e) The public works department has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure storm water flow and quality shall be calibrated to ensure their accuracy.
- (f) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the public works department and shall not be replaced. The costs of clearing such access shall be borne by the operator.
- (g) Unreasonable delays in allowing the public works department access to a permitted facility is a violation of a storm water discharge permit and of this article. A person who is the operator of a facility with an NPDES permit, construction permit, excavation or grading permit to discharge storm water associated with industrial activity commits an offense if the person denies the public works department reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this article.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-112. Search warrants.**

If the public works department has been refused access to any part of the premises from which storm water is discharged and it is able to demonstrate probable cause to believe that there may be a violation of this article or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this article or any order issued hereunder or to protect the overall public health, safety and welfare of the community, then the public works department may seek issuance of a search warrant from any court of competent jurisdiction.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-113. Requirement to prevent, control and reduce storm water pollutants by the use of best management practices.**

The public works department will adopt requirements identifying best management practices for any activity, operation or facility which may cause or contribute to pollution or contamination of storm water, the storm drainage system or waters of the United States. The owner or operator of such activity, operation or facility shall provide, at its own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drainage system or watercourses through the use of these structural and nonstructural BMPs. Further, any person responsible for a property or premises that is, or may be, the source of an illicit discharge may be required to implement, at said person's expense, additional structural and nonstructural BMPs to prevent the further discharge of pollutants to the MS4. Compliance with all terms and conditions of a valid NPDES permit, construction permit, excavation or grading permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a storm water management plan (SWMP) as necessary for compliance with requirements of the applicable permit.

(Ord. No. 10-44, § 1, 5-3-10)

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### **Sec. 21-114. Notification of spills.**

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drainage system or waters of the United States then said person shall take all necessary steps to ensure the discovery, containment and cleanup of such release. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of nonhazardous materials, said person shall notify the public works department in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the public works department within one (1) business day of the in-person or phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least two (2) years. Failure to provide notification of a release as provided above is a violation of this article.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-115. Violations.**

- (a) It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this article. Any person who has violated or continues to violate the provisions of this article may be subject to the enforcement actions outlined in this article or may be restrained by injunction or otherwise abated in a manner provided by law.
- (b) In the event the violation constitutes an immediate danger to public health or public safety, the public works department is authorized to enter upon the subject private property without giving prior notice to take any and all measures necessary to abate the violation and/or restore the property. The public works department is authorized to seek costs of the abatement as outlined in this article.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-116. Warning notice.**

When the public works department finds that any person has violated or continues to violate any provision of this article or any order issued hereunder, the public works department may serve upon that person a written warning notice specifying the particular violation believed to have occurred and requesting the discharger to immediately investigate the matter and to seek a resolution whereby any offending discharge will cease. Investigation and/or resolution of the matter in response to the warning notice in no way relieves the alleged violator of liability for any violations occurring before or after receipt of the warning notice. Nothing in this section shall limit the authority of the public works department to take any action, including emergency action or any other enforcement action, without first issuing a warning notice.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-117. Notice of violation.**

- (a) Whenever the public works department finds that a person has violated a prohibition or failed to meet a requirement of this article, the public works department may order compliance by written notice of violation to the responsible person. The notice of violation shall contain:

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- (1) The name and address of the alleged violator.
- (2) The address when available or a description of the building, structure or land upon which the violation is occurring or has occurred.
- (3) A statement specifying the nature of the violation.
- (4) A general description of the remedial measures necessary to restore compliance with this article and a time schedule for the completion of such remedial action provided, however, that nothing herein shall be construed to require the city to design or engineer the remedial measures.
- (5) A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed.
- (6) A statement that the determination of violation may be appealed to the city administrator by filing a written notice of appeal within ten (10) days of service of notice of violation.
- (7) A statement specifying that, should the violator fail to restore compliance within the established time schedule, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

(b) Such notice may require without limitation:

- (1) The performance of monitoring, analyses and reporting.
- (2) The elimination of illicit connections or discharges.
- (3) That violating discharges, practices or operations shall cease and desist.
- (4) The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property.
- (5) An assessment of an amount sufficient to cover administrative and remediation costs.
- (6) The implementation of source control or treatment BMPs.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-118. Compensatory action.**

In lieu of enforcement proceedings, penalties and remedies authorized by this article, the public works department may impose upon a violator alternative compensatory actions such as storm drain stenciling, attendance at compliance workshops, creek cleanup or such other action to which the parties may agree.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-119. MS4 access—Emergency cease and desist orders.**

- (a) When the public works department finds that any person has violated, or continues to violate, any provision of this article or any order issued hereunder, or that the person's past violations are likely to recur and that the person's violation has caused or contributed to an actual or threatened discharge to the MS4 or waters of the United States which reasonably appears to present an imminent or substantial endangerment to the health or welfare of persons or to the environment, the public works department may issue an order to the violator directing the violator immediately to cease and desist all such violations and directing the violator to:
  - (1) Immediately comply with all requirements of this article.

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- (2) Take such appropriate preventive action as may be needed to properly address a continuing or threatened violation, including immediately halting operations and/or terminating the discharge.
- (b) Any person notified of an emergency order directed to said person under this section shall immediately comply and stop or eliminate the endangering discharge. In the event of a discharger's failure to immediately comply voluntarily with the emergency order, the public works department may take such steps as deemed necessary to prevent or minimize harm to the MS4 or waters of the United States and/or endangerment to persons or to the environment, including immediate termination of a facility's water supply, sewer connection or other municipal utility services. The director of public works may allow the person to recommence its discharge when it has demonstrated to the satisfaction of the public works department that the period of endangerment has passed unless further termination proceedings are initiated against the discharger under this article. A person that is responsible, in whole or in part, for any discharge presenting imminent endangerment shall submit a detailed written statement describing the causes of the harmful discharge and the measures taken to prevent any future occurrence to the public works department within three (3) days of receipt of the emergency order. Issuance of an emergency cease and desist order shall not be a bar against, or a prerequisite for, taking any other action against the violator.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-120. Same—Suspension due to illicit discharges in emergency situations.**

The public works department may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment or to the health or welfare of persons or to the MS4 or waters of the United States. If the violator fails to comply with a suspension order issued in an emergency, the public works department may take such steps as deemed necessary to prevent or minimize damage to the MS4 or waters of the United States or to minimize danger to persons.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-121. Same—Suspension due to the detection of illicit discharge.**

Any person discharging to the MS4 in violation of this article may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The public works department will notify a violator of the proposed termination of its MS4 access. The violator may petition the city administrator for a reconsideration and hearing as set forth in this article. A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this section without the prior approval of the public works department.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-122. Violation is an offense; penalties.**

Any person who creates or allows to continue any violation of this article shall be guilty of an offense and may be charged in municipal court with failure to abate an illicit discharge and punished as set forth in section 1-20 of this Code and in addition to the penalties set forth therein shall be liable for the costs to the city of enforcement as set forth in this article.

(Ord. No. 10-44, § 1, 5-3-10)

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### **Sec. 21-123. Enforcement measures.**

If the violation has not been corrected pursuant to the requirements set forth in the notice of violation, then the city may enter upon the subject private property and take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the city or designated contractor to enter upon the premises for the purposes set forth above.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-124. Cost of abatement of the violation.**

The owner of the property will be notified of the cost of abatement, including administrative costs, as set forth in this article. If the amount due is not paid, the costs shall become a special assessment against the property and shall constitute a lien on the property for the amount of the costs.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-125. Violations deemed a public nuisance.**

In addition to the enforcement processes and penalties provided herein, any condition caused or permitted to exist in violation of any of the provisions of this article is deemed to be a threat to public health, safety and welfare and is declared and deemed a nuisance and may be summarily abated or restored at the violator's expense and/or a civil action to abate, enjoin or otherwise compel the cessation of such nuisance may be filed by the city.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-126. Remedies not exclusive.**

The remedies listed in this article are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the public works department to seek cumulative remedies. The public works department may recover all attorney fees, court costs and other expenses associated with enforcement of this article, including sampling and monitoring expenses.

(Ord. No. 10-44, § 1, 5-3-10)

### **Sec. 21-127. Hearing and appeal.**

- (a) *Procedure.* Any person aggrieved under this article may appear in person or by representative at a hearing with the city administrator if a request for hearing is requested not later than ten (10) days after the receipt of notice of violation.
- (b) *Hearing.* The city administrator shall conduct a full and adequate hearing upon the question of whether this article has been violated. The city administrator may amend or modify the notice of violation or extend the time for compliance with the notice.
- (c) *Evidence.* The owners or occupants of the property or their representatives shall be given the opportunity to present evidence to the city administrator in the course of the hearing.

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- (d) *Decision.* Should the evidence support a finding that this article has been violated, the city administrator shall issue a decision making specific findings of fact based upon competent and substantial evidence which shows a violation of this article and ordering compliance therewith.
- (e) *Additional time.* The city administrator, upon written application by the owners or occupants of the property, may grant additional time to comply with this article, provided that such extension is limited to a specific time period.
- (f) *Appeal from decision of city administrator.* If the decision of the city administrator is not appealed to the Circuit Court of Cape Girardeau County within thirty (30) days from the date of the mailing of said decision, the decision shall be declared final in accordance with RSMo ch. 536.

(Ord. No. 10-44, § 1, 5-3-10)

**Appendix 3-5**  
Priority Area Map

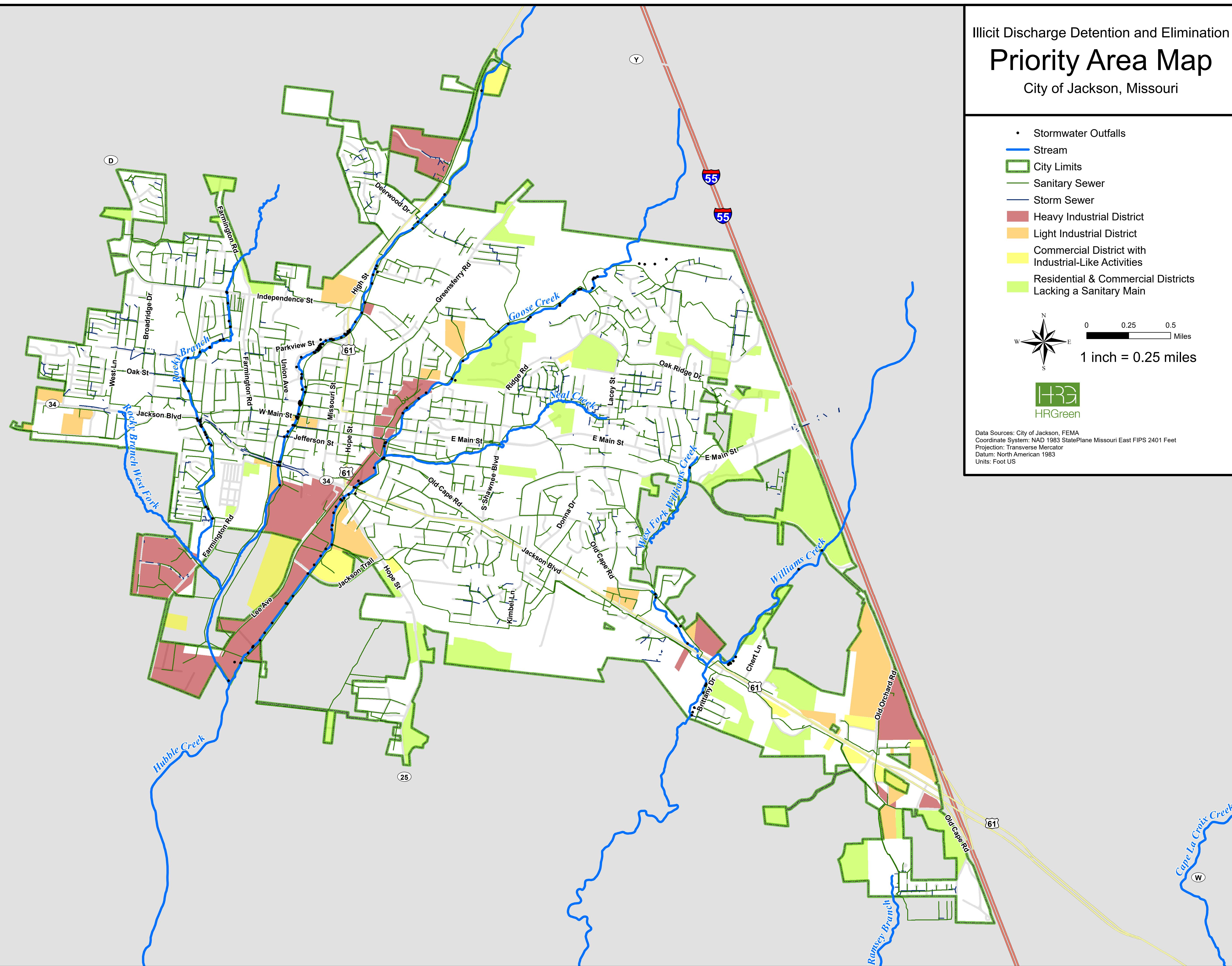
Illicit Discharge Detention and Elimination  
**Priority Area Map**  
City of Jackson, Missouri

- Stormwater Outfalls
- Stream
- City Limits
- Sanitary Sewer
- Storm Sewer
- Heavy Industrial District
- Light Industrial District
- Commercial District with Industrial-Like Activities
- Residential & Commercial Districts Lacking a Sanitary Main

0 0.25 0.5  
Miles  
1 inch = 0.25 miles



Data Sources: City of Jackson, FEMA  
Coordinate System: NAD 1983 StatePlane Missouri East FIPS 2401 Feet  
Projection: Transverse Mercator  
Datum: North American 1983  
Units: Foot US



**Appendix 3-6**  
Illicit Discharge Field Investigation Checklist

# Illicit Discharge Field Investigation Checklist

City of Jackson, MO

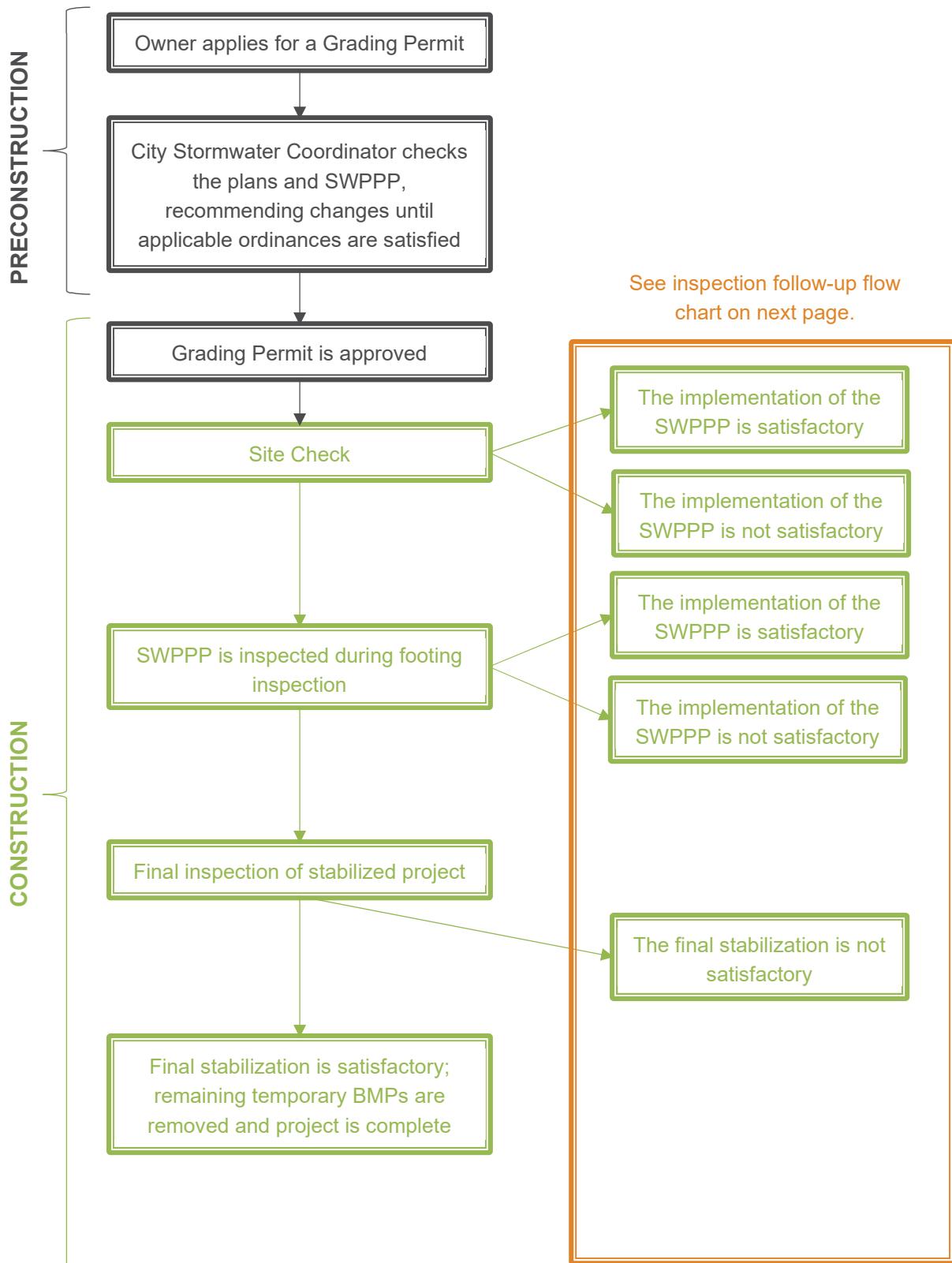
Date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Routine Inspection  Re-inspection

Location	Contaminant Indicator
<b>Outfall ID:</b> _____ <b>Closest Street Address:</b> _____ <b>Nearby Landmark:</b> _____	<b>Odor:</b> <input type="checkbox"/> None <input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum (gas) <input type="checkbox"/> Sulfide (rotten eggs), natural gas <input type="checkbox"/> Other: _____
<b>General Location:</b> <input type="checkbox"/> Stream corridor (in or adjacent to stream) <input type="checkbox"/> Upland area (land not adjacent to stream)	
<b>Specific Location:</b> <input type="checkbox"/> Outfall <input type="checkbox"/> In-stream flow <input type="checkbox"/> Along banks <input type="checkbox"/> Near storm drain <input type="checkbox"/> Near water source (detention basin, pond, wetland, etc.)	<b>Appearance:</b> <input type="checkbox"/> Normal <input type="checkbox"/> Oil sheen <input type="checkbox"/> Cloudy <input type="checkbox"/> Suds <input type="checkbox"/> Extensive moss <input type="checkbox"/> Other: _____
<b>Description of Location:</b> _____	
<b>Dry Weather Flow Observed:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>Narrative</b> Write additional information here. <small>Attach additional sheets if necessary.</small>	<b>Floatables:</b> <input type="checkbox"/> None <input type="checkbox"/> Sewage (bathroom & kitchen debris) <input type="checkbox"/> Algae <input type="checkbox"/> Dead fish <input type="checkbox"/> Other: _____
<b>Are additional sheets attached?</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Re-inspection date:</b> _____	<b>Source investigation completed:</b> <input type="checkbox"/> Visual inspection <input type="checkbox"/> Manhole or inlet inspections <input type="checkbox"/> CCTV Inspection <input type="checkbox"/> Dye testing <input type="checkbox"/> Site specific sampling and testing <input type="checkbox"/> PH _____ <input type="checkbox"/> Temperature _____ <input type="checkbox"/> Conductivity _____
Next Steps	<p>If a dry weather flow with contaminant indicators were observed:</p> <ol style="list-style-type: none"> <li>1. Immediately attempt to identify the source by using visual inspection. If the source cannot be located by visual inspection, discuss more extensive investigation with City Stormwater Coordinator such as upstream manhole inspections, CCTV, sampling and chemical analysis, and dye testing.</li> <li>2. When the source is confirmed, notify the source that the illicit discharge must be stopped. Notify by personal visit or telephone conversation and with a written Notice of Violation.</li> <li>3. Complete a re-inspection 10 days after the Notice of Violation is sent.</li> </ol>

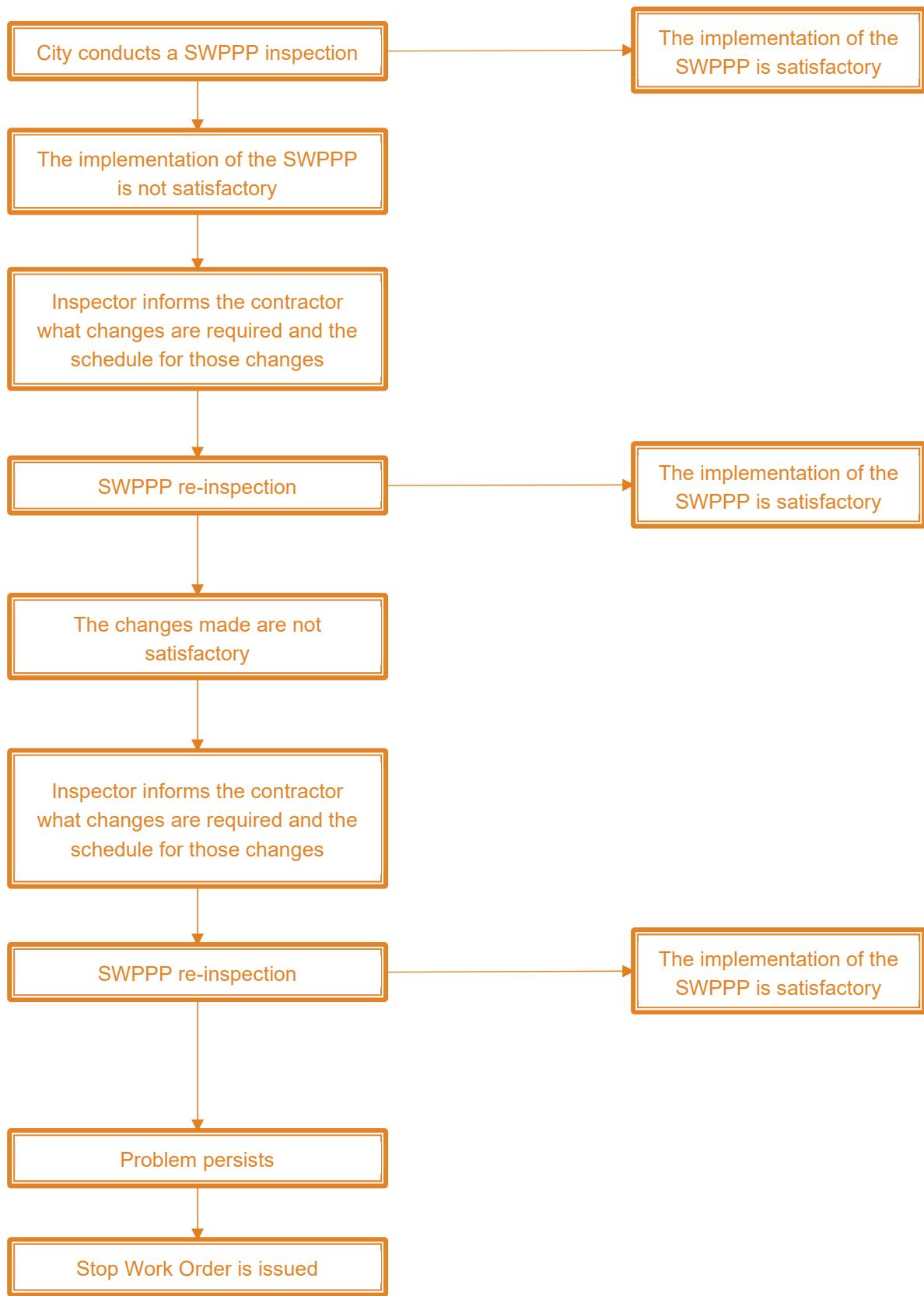
**Appendix 4-1**  
Site Inspection Flow Chart



Site Inspection Flow Chart

**Appendix 4-2**  
Inspection Non-Compliance Flow Chart

### Inspection Non-Compliance Flow Chart



**Appendix 4-3**  
City Ordinance Chapter 21 Article II. Site Development; Erosion Control

## **ARTICLE II. SITE DEVELOPMENT; EROSION CONTROL**

### ***DIVISION 1. GENERALLY***

#### **Sec. 21-26. Purpose.**

The purpose of this article is to control soil erosion on land that is undergoing development for non-agricultural uses and to preserve the natural terrain and waterways of the land within the city. Soil erosion scars the land and creates sediment that clogs storm sewers and road ditches; chokes streams and creates silt bars, all of which pose a threat to public health and safety. The provisions in this article are intended to provide a natural community environment, to prevent soil erosion and to reduce costly repairs to gullies, washed out fills, water conveyance systems, roads and embankments. Application of the regulations in this article will effectively control soil erosion and sedimentation.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

#### **Sec. 21-27. Scope of authority.**

Any person, firm, corporation, or business proposing to develop land within the city shall apply to the office of the public works director for approval of his or her erosion control plan and issuance of a grading permit as specified in this article. No land shall be graded without the issuance of such permit by the city. However, grading operations for single or two-family residential lots of any size or for commercial and industrial lots which are one (1) acre or less in area and do not involve more than five hundred (500) cubic yards of grading operations shall be exempt from providing a grading application and performance bond.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

#### **Sec. 21-28. Bond requirement.**

Upon approval of the erosion control plan and the issuance of a grading permit, the public works director shall require the developer to post a performance bond, escrow agreement, lender's agreement, cash or certified check in the amount of all work to be done under the erosion control plan. This shall be in addition to the requirements for completion of other improvements necessary for subdivision plat approval. The bond shall be released upon the completion of grading and erosion control operations.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

#### **Secs. 21-29—21-40. Reserved.**

### ***DIVISION 2. REGULATIONS***

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## **Sec. 21-41. Erosion and sedimentation control plan content.**

Grading plans for grading operations in excess of one (1) acre or five hundred (500) cubic yards, whichever is less, site plans, preliminary plat of subdivision, or the subdivision improvement plan shall include the following additional information.

- (1) Erosion and sediment control plans submitted to the office of the city clerk shall include two (2) sets of maps and plans with specifications showing proposed excavation, grading or filling, and will include the following:
  - a. Full name and address of property owner;
  - b. Designation of property address;
  - c. Portion of the property that is to be excavated, graded or filled with excavated material;
  - d. Location of any sewerage disposal system or underground utility line, any part of which is within fifty (50) feet of the proposed excavation, grading or filling area and the location of any gas transmission pipe line operated at a maximum service pressure in excess of two hundred (200) p.s.i.g., any part of which is within one hundred (100) feet of the proposed excavation, grading or filling area;
  - e. Existing grade and topography of the premises and the proposed finish grade and final contour elevation at a contour interval of not more than two (2) feet;
  - f. Location and present status of any previous permitted grading operation on the property;
  - g. Details of any drainage system proposed to be installed and maintained by the applicant and a comprehensive drainage plan designed to safely handle surface water, streams, or other natural drains following heavy rains during grading operations;
  - h. Details of any proposed water impoundment structures, embankments, debris basins, grass or lined waterways, and diversions with the details and locations of proposed stable outlets;
  - i. Details of soil preparation and re-vegetation of the finished grade and of other methods of erosion control;
  - j. Delineation of the fifty (50) and one hundred (100) year flood plain;
  - k. A statement from the property owner or his agent assuming full responsibility for the performance of the operation as stated in the application. This statement shall also contain assurance that all municipal property or streets will be adequately protected and/or repaired, if damaged.
  - l. Details on all erosion control structures. The owner will follow all federal, state, and local laws, especially those guidelines as established in Missouri Department of Natural Resources (MDNR's) publication "Protecting water quality."
  - m. Commencement and completion dates of the grading project and anticipated construction date of improvements.
- (2) The proposed phasing of development of the site, including clearing, rough grading and construction, and final grading and landscaping should identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas and the sequence of clearing, installation of temporary sediment control measures, establishment of storm drainage, paving streets and parking areas, and establishment of temporary and permanent vegetative cover. The city engineer may waive specific requirements of the content of submissions upon finding that the information submitted is sufficient to show that the plan and work will comply with the objectives and principles of this article.

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- (3) Failure to complete the plan by the completion date shall trigger city's use of bonding or escrow requirements. Completion may be extended by the public works director or his designate in writing.
- (4) The developer and city staff shall utilize all of the following:
  - a. Missouri Department of Natural Resources (MDNR) "Protecting water quality. A field guide to erosion, sediment, and storm water best management practices for development sites in Missouri and Kansas."
  - b. Missouri Department of Natural Resources (MDNR) "Storm water permit requirements for land disturbance activities."
  - c. Environmental protection agency (EPA) "Storm water management for construction activities."

When conflicts arise between manuals or any other city, state or federal regulation, the most stringent criteria shall control.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

### **Sec. 21-42. Plan approval.**

- (a) No non-agricultural grading or clearing operation in excess of one (1) acre or five hundred (500) cubic yards, whichever is less, shall be conducted and no final plat of subdivision shall be recommended for approval by the erosion control officer or the planning and zoning commission unless the preliminary plat and erosion and sediment control plans indicate that measures to be taken will meet erosion control standards. The standards assure that the best possible means are being used to prevent sediment from being transported from the site by a storm event of two (2) year frequency, twenty-four (24) hour duration storm or less, and that the following principles set forth in section 21-43 will be applicable. (Permit approval/disapproval will be issued within thirty (30) days of erosion and sediment control plan submission.)
- (b) Conservation district comments: The erosion control officer may submit the plan for review by the soil and water conservation district. When a plan is so submitted, the district may make comments and recommendations. All such comments and recommendations should be made within fifteen (15) days of the receipt by the district. Such comments may pertain but need to be limited to:
  - (1) Erosion and sediment control.
  - (2) Soil use limitations.
  - (3) Environmental considerations.
  - (4) Drainage and flooding.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

### **Sec. 21-43. Principles and standards.**

- (a) All excavations, grading or filling shall have a finished grade not to exceed a 3:1 (three (3) horizontal to one (1) vertical) slope. Steeper grades may be approved by the city engineer if the excavation is through rock or the excavation or fill is protected (a designed head wall or toe wall may be required). Retaining walls that exceed a height of four (4) feet shall require the construction of safety guards as identified in the Building Code of the City of Jackson or subsequent amendments thereto. Permanent safety guards will be constructed in accordance with the adopted Building Code of the City of Jackson.
- (b) Grading plans for sites that exceed one (1) acre shall provide for sediment or debris basins, silt traps or filters, staked straw bales, a combination of these measures or other measures approved by the city

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engineer to remove sediment from runoff waters. The design to be approved by the public works director. Temporary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.

- (c) Where natural vegetation is removed during grading, vegetation shall be re-established in such a density as to prevent erosion. Permanent type grasses shall be established as soon as possible or during the next seeding period after grading has been completed.
- (d) When grading operations are completed or suspended for more than thirty (30) days between permanent grass seeding periods, temporary cover shall be provided according to the public works director's recommendation.

All finished grades (areas not to be disturbed by future improvements) in excess of (5:1) slopes (five (5) horizontal to one (1) vertical) shall be mulched at the rate of one hundred (100) pounds per one thousand (1,000) square feet when seeded.

- (e) Provisions shall be made to accommodate the increased runoff caused by changed soil and surface conditions during and after grading. Unvegetated open channels shall be designed so that gradients result in velocities of two (2) feet per second (fps) or less. Velocities in permanently vegetated open channels shall not exceed five (5) fps. Unvegetated open channels with velocities more than two (2) fps and less than five (5) fps shall be established in permanent vegetation by use of commercial erosion control blankets or lined with rock riprap or concrete or other suitable materials as approved by the public works director. Detention basins, diversions, or other appropriate structures shall be constructed to prevent velocities above five (5) fps.
- (f) Ground adjoining development sites (lots) shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequences of erosion. Runoff water from developed areas (parking lots, paved sites, and buildings) above the area to be developed shall be directed to diversions, detention basins, concrete gutters, and/or underground outlet systems. Sufficiently anchored straw bales may be substituted with the approval of the public works director.
- (g) Development along natural watercourses shall have a minimum thirty (30) foot general maintenance and drainage easement from the top of the existing stream bank. Development shall not encroach on said thirty (30) foot easement. The watercourse shall be maintained and made the responsibility of the appropriate legal entity. Permanent vegetation should be left intact. Variances will include designed stream bank erosion control measures and shall be approved by the public works director. FEMA guidelines shall be followed where applicable regarding site development in flood plains.
- (h) All lots shall be seeded and mulched or sodded before an occupancy permit shall be issued except that a temporary occupancy permit may be issued by the director or his designate in cases of undue hardship because of unfavorable ground conditions.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01; Ord. No. 05-118, § 3, 9-19-05; Ord. No. 12-44, § 3, 6-4-12)

## **Secs. 21-44—21-50. Reserved.**

## ***DIVISION 3. INSPECTION AND VIOLATION***

### **Sec. 21-51. Inspections.**

By applying for a grading permit, the applicant consents to the city inspecting the proposed development site and all work in progress.

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(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

### **Sec. 21-52. Correction.**

All violations shall be corrected within the time limit set forth by the public works director specified in the issuance of a written notice to correct. All persons failing to comply with such notice shall be deemed in violation of this article.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

### **Sec. 21-53. Violations.**

In the event of an ordinance violation, the bond requirement proceeds shall be used by the city to complete the planned sediment and erosion control practices.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

### **Sec. 21-54. Penalties.**

Any person violating any provision of this article and found guilty of such violation shall be punished in accordance with section 1-20 hereof; for continuing violations, each day shall be considered a separate offense.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

### **Sec. 21-55. Appeals.**

Any person denied a grading permit as herein stated shall have the right to appeal such denial to the board of adjustment of the city within forty-five (45) days of the date of such denial.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

### **Secs. 21-56—21-65. Reserved.**

## **DIVISION 4. DEFINITIONS**

### **Sec. 21-66. Definitions.**

For the purposes of this article, the following words and phrases shall have the meanings respectively ascribed to them by this section:

*Debris or sediment basin.* A barrier or dam built across the waterway or at other suitable locations to retain rock, sand, sediment, gravel, silt, or other materials.

*Diversion.* A channel with or without a supporting ridge on the lower side constructed across or at the bottom of a slope.

*Erosion.* The wearing away of the land surface by the action of wind, water, or gravity.

*Excavation or cut.* The removal, stripping or disturbance of soil, earth, sand, rock, gravel, or other substance from the surface of the earth.

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(Supp. No. 20, Rev.)

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*Existing grade.* The vertical location of the existing ground surface prior to excavation or filling.

*FEMA.* Federal Emergency Management Agency.

*Fill or filling.* The placing of any soil, earth, sand, rock, gravel or other substance on the ground.

*Finished grade.* The final grade or elevation of the ground surface conforming to the proposed design.

*Grading.* Any excavation or filling or combination thereof

*International Building Code.* Refers to the 2015 International Building Code as published by the International Codes Council and all amendments thereto.

*International Residential Code.* Refers to the 2015 International Residential Code as published by the International Codes Council and all amendments thereto.

*Natural watercourse.* A channel formed in the existing surface topography of the earth prior to changes made by unnatural conditions.

*Open channel.* A constructed ditch or channel designed for water flow.

*Person.* Shall include any partnership, corporation, joint venture, or legal entity.

*Sediment.* Solid material, mineral or organic, that has been moved by erosion and deposited in a location other than the point of origin.

*Silt traps or filters.* Staked bales of straw or silt fencing systems that function as a filter and a velocity check to trap fine-grained sediment while allowing satisfactory passage of storm water run-off.

*Site.* A lot or parcel of land, or a contiguous combination thereof, where grading work is performed as a single unified operation.

*Site development.* Altering terrain and/or vegetation and constructing improvements

*Soil and water conservation district (SWCD).* RSMo. Chapter 278.070(4) defines a soil and water conservation district as a locally organized and operated unit of government, functioning under Missouri law, to promote protection, maintenance, improvement, and wise use of the soil and water within the county.

*Streambank, top of existing.* The usual boundaries, not the flood boundaries, of a stream channel. The top of the natural incline bordering a stream.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01; Ord. No. 05-118, § 4, 9-19-05; Ord. No. 12-44, § 4, 6-4-12; Ord. No. 17-84, § 3, 12-18-17)

## ***DIVISION 5. APPLICATION AND ADOPTION***

### ***Sec. 21-67. Review/conflict.***

This article shall be considered by the public works director in his review and recommendation of subdivision plans and developments submitted to the city for approval. Any provision of the city subdivision regulations which is in conflict with this article shall be deemed amended by this article so that the conflicting provision shall be in accordance with the provisions of this article.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

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**Sec. 21-68. Plan to be implemented prior to permit issuance.**

When it has been determined that a detention basin, concrete gutter, etc., must be constructed due to the development of a piece of property, before a building permit can be obtained, the detention basin or structure required for that development must be fully constructed and operational.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01)

**Secs. 21-69—21-99. Reserved.**

**Appendix 4-4**  
Grading Permit Application

# CITY OF JACKSON

## GRADING PERMIT APPLICATION

Chapter 21 of Code of Ordinances requires contractors to obtain a Grading Permit for grading operations in excess of one (1) acre or five-hundred (500) cubic yards.

Any Department of Natural Resources Permits must be completed prior to applying for a City Grading Permit.

### FOR INTERNAL USE ONLY

Permit No. \_\_\_\_\_

Date Received \_\_\_\_\_

### THE FOLLOWING MUST BE INCLUDED WITH THIS PERMIT APPLICATION:

- Copy of MDNR Land Disturbance Permit (not required if less than one acre)
- Floodplain Development Permit (if required)
- Architect/Engineer's estimated cost of all work to be done under the sediment and erosion control plan, including final seeding
- A bond or other acceptable financial instrument in the amount of the estimated cost
- Detailed site plan with details of erosion control methods (see reverse side for requirements)
- A Stormwater Pollution Prevention Plan

**1) Street Address/Description of Property:**

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**2) Description of Work:**

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**3) Area of Disturbance:**  
Acres \_\_\_\_\_

**5) Will excess material be deposited at another site?**  Yes  No

Deposit Site Location/Description:

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**4) Amount of Excavation:**  
CY Cut \_\_\_\_\_  
CY Fill \_\_\_\_\_

**6) Start Date:** \_\_\_\_\_ **Completion:** \_\_\_\_\_

**7) Applicant (if not Owner)**

N/A

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

**8) Property Owner**

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Owner's Signature: \_\_\_\_\_

**9) Contractor**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Print: \_\_\_\_\_

Date: \_\_\_\_\_

**Plans to be submitted with this application must include the following:** a) full name and address of property owner; b) property address and/or description; c) designation of the portion of the property that is to be excavated, graded, or filled with material; d) location of any underground utility lines, including but not limited to underground cables, sewerage, water, gas, and electric; e) existing grade and topography of the premises and the proposed finish grade and final contour elevations at a contour interval of not more than two (2) feet; f) location and present status of any previous permitted grading operation on the property; g) details of any drainage system proposed to be installed and maintained by the applicant and a comprehensive drainage plan designed to safely handle surface water, streams, or other natural drains following heavy rains during grading operations; h) details of any proposed water impoundment structures, embankments, debris basins, grass or lined waterways, and diversions with the details and locations of proposed stable outlets; i) details of soil preparation and re-vegetation of the finished grade and of other methods of erosion control; j) delineation of the fifty (50) and one hundred (100) year flood plain; k) details on all erosion control structures that follow all federal, state, and local laws, especially those guidelines as established in the Missouri Department of Natural Resource's publication "Protecting Water Quality"; l) location of the installation of temporary sediment control measures; m) location of existing and proposed paved streets and parking areas. **Bond Requirement:** Upon approval of the erosion control plan and the issuance of a grading permit, the City Engineer shall require the developer to post a performance bond, escrow agreement, lender's agreement, cash, or certified check in the amount of all work to be done under the approved erosion control plan. This shall be in addition to the requirements for completion of other improvements necessary for subdivision plat approval. The bond shall be released upon the completion of grading and erosion control operations. **FAILURE TO COMPLETE THE PLAN BY THE COMPLETION DATE SHALL TRIGGER THE CITY'S USE OF THE BONDING OR ESCROW REQUIREMENTS.** Completion may be extended by the City Engineer or his designate in writing. **Resources to be Used:** The developer and city staff shall utilize all of the following: a) Missouri Department of Natural Resources (MDNR) "Protecting Water Quality: A Field Guide to Erosion, Sediment, and Storm Water Best Management Practices for Development Sites in Missouri and Kansas"; b) Missouri Department of Natural Resources (MDNR) "Storm Water Permit Requirements for Land Disturbance Activities"; c) Environmental Protection Agency (EPA) "Storm Water Management for Construction Activities". When conflicts arise between manuals or any other city, state, or federal regulation, the most stringent criteria shall control. **Principals and Standards:** 1) All excavations, grading, or filling shall have a finished grade not to exceed a 3:1 (three (3) horizontal to one (1) vertical) slope. Steeper grades may be approved by the City Engineer if the excavation is through rock or the excavation or fill is protected (a designed head wall or toe wall may be required). Retaining walls that exceed a height of four (4) feet shall require the construction of safety guards as identified in the Building Code of the City of Jackson or subsequent amendments thereto. Permanent safety guards will be constructed in accordance with the adopted Building Code of the City of Jackson; 2) Grading plans for sites that exceed one (1) acre shall provide for sediment or debris basins, silt traps or filters, staked straw bales, a combination of these measures or other measures approved by the City Engineer to remove sediment from runoff waters. The design to be approved by the Public Works Director. Tem-

porary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on site; 3) Where natural vegetation is removed during grading, vegetation shall be re-established in such a density as to prevent erosion. Permanent type grasses shall be established as soon as possible or during the next seeding period after grading has been completed; 4) When grading operations are completed or suspended for more than thirty (30) days between permanent grass seeding periods, temporary cover shall be provided according to the Public Works Director's recommendation. All finished grades (areas not to be disturbed by future improvements) in excess of 5:1 (five (5) horizontal to one (1) vertical) slopes shall be mulched at the rate of one hundred (100) pounds per one thousand (1,000) square feet when seeded. 5) Provisions shall be made to accommodate the increased runoff caused by changed soil and surface conditions during and after grading. Unvegetated open channels shall be designed so that gradients result in velocities of two (2) feet per second or less. Velocities in permanently vegetated open channels shall not exceed five (5) feet per second. Unvegetated open channels with velocities more than two (2) feet per second and less than five (5) feet per second shall be established in permanent vegetation by use of commercial erosion control blankets or lined with rock riprap or concrete or other suitable materials as approved by the Public Works Director. Detention basins, diversions, or other appropriate structures shall be constructed to prevent velocities above five (5) feet per second; 6) Ground adjoining development sites shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequences of erosion. Runoff water from developed areas above the area to be developed shall be directed to diversions, detention basins, concrete gutters, and/or underground outlet systems. Sufficiently anchored straw bales may be substituted with the approval of the Public Works Director; 7) Development along natural watercourses shall have a minimum of thirty (30) foot general maintenance and drainage easement from the top of the existing stream bank. Development shall not encroach on said thirty (30) foot easement. The watercourse shall be maintained and made the responsibility of the appropriate legal entity. Permanent vegetation should be left intact. Variances will include designed stream bank erosion control measures and shall be approved by the Public Works Director. FEMA guidelines shall be followed where applicable regarding site development in flood plains; 8) All lots shall be seeded and mulched or sodded before an occupancy permit shall be issued except that a temporary occupancy permit may be issued by the Director or his designate in cases of undue hardship because of unfavorable ground conditions. **Inspections:** By applying for a grading permit, the applicant consents to the City inspecting the proposed development site and all work in progress. **Corrections:** All violations shall be corrected within the time limit set forth by the Public Works Director specified in the issuance of a written notice to correct. All persons failing to comply with such notice shall be deemed in violation. **Violations:** In the event of an ordinance violation, the bond requirement proceeds shall be used by the City to complete the planned sediment and erosion control practices. **Penalties:** Any person violating any provision and found guilty of such violation shall be punished in accordance with Section 1-20 of the Code of Ordinances; for continuing violations, each day shall be considered a separate offense. **Appeals:** Any person denied a grading permit as herein stated shall have the right to appeal such denial to the Board of Adjustment within forty-five (45) days of the date of such denial.

**Appendix 4-5**  
Grading Permit Checklist

# GRADING PERMIT CHECKLIST

*City of Jackson / Department of Public Works / Department of Engineering  
101 Court Street / Jackson, Missouri 63755 / 573-243-2300 / www.jacksonmo.org*

Permit No.:

Project Name:

Review No.:

## A. GENERAL REQUIREMENTS

1) Grading permit application submitted and complete	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2) Copy of MDNR Land Disturbance Permit	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3) Floodplain Development Permit	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
4) Architect/Engineer's estimated cost of all work to be done under the erosion control plan, including final seeding	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
5) A bond or other acceptable financial instrument in the amount of the estimated cost	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
6) A Stormwater Pollution Prevention Plan	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A

## B. EROSION AND SEDIMENTATION CONTROL PLAN CONTENT (Sec. 21-41)

1) Full name and address of property owner	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
2) Designation of property address (or property description if address is not	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
3) Portion of the property that is to be excavated, graded, or filled	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
4) Location of any underground utility lines	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
5) Existing grade and topography of the premises	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
6) Proposed finished grade and final contour elevation at a contour interval of not more than 2 feet	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
7) Location and present status of any previous permitted grading operations on the property	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
8) Details of any drainage system proposed to be installed and maintained by the applicant and a comprehensive drainage plan designed to safely handle surface water, streams, or other natural drains following heavy rains during grading	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A
9) Details of any proposed water impoundment structures, embankments, debris basins, grass or lined waterways, and diversions with the details and locations of the proposed, stable outlets	<input type="checkbox"/> YES	<input type="checkbox"/> NO	<input type="checkbox"/> N/A

# GRADING PERMIT CHECKLIST

10) Details of soil preparation and re-vegetation of the finished grade and of other methods of erosion control  YES  NO  N/A

11) Delineation of the 50 and 100 year flood plain  YES  NO  N/A

12) Details on all erosion control structures that follow all federal, state, and local laws, especially those guidelines in MDNR's publication "Protecting Water Quality"  YES  NO  N/A

13) Location of the installation of temporary sediment control measures  YES  NO  N/A

14) Location of existing and proposed paved streets and parking areas  YES  NO  N/A

## C. PRINCIPALS AND STANDARDS (Sec. 21-43)

1) All excavations, grading, or filling shall have a finished grade not to exceed a 3:1  YES  NO  N/A

2) Grading plans that exceed 1 acre shall provide for sediment or debris basins, silt traps or filters, staked straw bales, a combination of these measures, or other measures approved by the City Engineer to remove sediment from runoff waters  YES  NO  N/A

3) Where natural vegetation is removed during grading, vegetation shall be re-established in such a density as to prevent erosion  YES  NO  N/A

4) Provisions shall be made to accommodate the increased runoff caused by changed soil and surface conditions during and after grading

- i) Unvegetated open channels shall be designed so that the gradients result in velocities of 2fps or less  YES  NO  N/A
- ii) Velocities in permanently vegetated open channels shall not exceed 5fps  YES  NO  N/A
- iii) Unvegetated open channels with velocities more than 2fps and less than 2fps shall be established in permanent vegetation by use of commercial erosion control blankets or lined with rock rip-rap, concrete, or other suitable materials  YES  NO  N/A
- iv) Detention basins, diversions, or other appropriate structures shall be constructed to prevent velocities above 5fps  YES  NO  N/A

5) Ground adjoining development sites (lots) shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequences of erosion  YES  NO  N/A

6) Runoff water from developed areas (parking lots, paved sites, and buildings) above the area to be developed shall be directed to diversions, detention basins, concrete gutters, and/or underground outlet systems  YES  NO  N/A

# GRADING PERMIT CHECKLIST

7) Development along natural watercourses shall have a minimum 30 foot general maintenance and drainage easement from the top of existing stream bank  YES  NO  N/A

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This Grading Permit is **NOT APPROVED** due to the following conditions:

This Grading Permit is **APPROVED** under the following conditions:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

This Grading Permit is **APPROVED**

---

City Staff Engineer

Date

This Grading Permit only issues the approval of the grading and stormwater work to be done by the Owner/Contractor. All other construction operations that are not covered in this permit shall not begin without prior consent from the City of Jackson Building and Planning Supervisor or their designated officials. By applying for a Grading permit and approval thereof, the applicant consents to the City inspecting the proposed development site and all work in progress. Violations of this Grading Permit and its approval will result in a Stop Work Notice. Any violations of this approval must be corrected within the time limit sent forth by the Public Works Director specified in the issuance of a written notice to correct. Any person denied a Grading Permit shall have the right to appeal such denial to the Board of Adjustment of the City within 45 days of the date of such denial.

**Appendix 4-6**  
Construction Site Pollution Prevention Checklist

# Stormwater Pollution Prevention Inspection

City of Jackson, MO

Date:

Inspector:

Project Name:

Permit No:

Routine Inspection  Re-inspection

Inspection Item	Adequate	Inadequate	See Comments	Not Applicable
Documentation <ul style="list-style-type: none"><li>• Is SWPPP kept on site &amp; up-to-date?</li><li>• Are self-inspections kept on site &amp; up-to-date?</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Erosion and sediment control BMPs <ul style="list-style-type: none"><li>• Silt fencing/perimeter control properly installed and maintained?</li><li>• Site entrances properly constructed and maintained?</li><li>• Inlet protection controls installed and maintained?</li><li>• Disturbed areas stabilized after activity has ceased for 14 days?</li><li>• Paved streets and adjacent properties free of sediment?</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Good housekeeping BMPs <ul style="list-style-type: none"><li>• Construction debris and trash properly disposed?</li><li>• Temporary sanitary bathrooms properly located and maintained?</li><li>• Hazardous materials such as solvents, paints, fertilizers, etc. properly stored in secondary containment?</li><li>• Concrete and mortar washouts properly managed and clearly marked?</li><li>• Paint, solvents, oil, hazardous waste, construction waste protected from runoff?</li><li>• Nearby streams free of waste/other products?</li></ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments

**Appendix 4-7**  
City Ordinance Chapter 1 Section 20

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## **Sec. 1-20. General penalty.**

Except as hereinafter provided, whenever in this Code or in any other ordinance of the city or in any rule, regulation or order promulgated pursuant to such Code or other ordinance of the city any act is prohibited or is made or declared to be unlawful or an offense or a misdemeanor, or whenever in such Code or in such other city ordinance, rule, regulation or order the doing of any act is required or the failure to do any act is declared to be unlawful, where no specific penalty is provided therefor, the violation of any such provision of this Code or of any other ordinance of the city or of any rule, regulation or order promulgated pursuant to such Code or other city ordinance shall be punishable by a fine not exceeding five hundred dollars (\$500.00) or by imprisonment for a period of not exceeding three (3) months.

Whenever any provision of the Revised Statutes of Missouri limits the authority of the city to punish the violation of any particular provision of this Code or other city ordinance or rule, regulation or order promulgated pursuant thereto to a fine of less amount than that provided in this section or imprisonment for a shorter term than that provided in this section, then the violation of such particular provision of this Code or other city ordinance, rule, regulation or order shall be punished by the imposition of not more than the maximum fine or imprisonment so authorized or by both such fine or imprisonment.

Each day any violation of this Code or any other city ordinance or rule, regulation or order promulgated pursuant thereto shall continue shall constitute a separate offense, unless otherwise provided.

(Ord. No. 2477, § 1; Ord. No. 3812, § 1, 2-1-99)

Cross reference(s)—Offenses, Ch. 45.

State law reference(s)—Similar provisions, RSMo 79.470.

**Appendix 5-1**  
City Ordinance Chapter 57 Section 10

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## **Sec. 57-10. Minimum improvements required.**

(a) *In general.* Receipt of an approved copy of the preliminary plat by the board of aldermen is authorization for the subdivider to proceed with the preparation of the final plans and specifications for the minimum improvements and with the preparation of the final plat. Prior to the construction of any improvements, the subdivider shall furnish the director all plans, information and data necessary to determine the character of said improvements. These plans shall be examined by the director and his staff and will be approved, if in accordance with the requirements of this section. Following this approval, construction can be started or the amount of a bond determined, or an assessment provided for. The final record plat of any subdivision shall not be recorded unless:

- (1) The minimum improvements required have been installed and successfully tested; or
- (2) The subdivider files with the board of aldermen a surety bond, cashier's check, or a certified check or irrevocable letter of credit upon a solvent bank, conditioned to secure the construction of the improvements listed below in a satisfactory manner and within a period specified by the board of aldermen, such period not to exceed two (2) years. No such bond or check shall be accepted unless it be enforceable by or payable to the city in a sum at least equal to the cost of constructing the improvements as estimated by the city engineer and in form with surety and conditions approved by the city attorney.
- (3) The owner of a tract may prepare and secure approval of a preliminary subdivision plat of an entire area and may install the above improvements only in a portion of such area, but the improvements must be installed in any portion of the area for which a final plat is approved for recording; provided, however, that trunk sewers and any sewage treatment plants shall be designed and built in such a manner that they can easily be expanded or extended to serve the entire area.

(b) *Conditions of city maintenance.*

- (1) The director shall, within thirty (30) days after completion of the improvements, file a written notice of completion with the city clerk, provided the improvements have been constructed in accordance with the requirements and conditions of this chapter and the specifications of the city.
- (2) The city shall not have any responsibility for providing maintenance or other city services with respect to any street, or other improvement until the notice of completion has been filed, and an approved maintenance bond has been received from the developer.
- (3) Under no circumstances shall the city maintain improvements until the as-built plans for said improvements are submitted to and approved by the director.

(c) *Streets.* Street plans, profiles, and specifications shall be prepared by a registered professional engineer on plan and profile paper and shall be reviewed and approved by the director, planning and zoning commission, and board of aldermen.

- (1) *Construction.*
  - a. Alleys and local streets shall be constructed of Portland Cement Concrete with integral curbs (or concrete curb and gutter), or bituminous plant mix roadway with a concrete curb and gutter in accordance with city standard street specifications.
  - b. Collector and arterial streets shall be constructed of Portland Cement Concrete with integral curbs (or concrete curb and gutter) in accordance with city standard street specifications.
  - c. In rights-of-way, all storm sewer, drainage, and culvert piping shall be restricted to Portland Cement Concrete pipe only.

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- (2) *Roadway sections.* Typical roadway sections showing various widths of roadway and rights-of-way, and required thicknesses shall be provided with improvement plans.
- (3) *Pavement design/surface types.* Pavement surfacing for public streets and alleys shall be either Portland Cement Concrete or Plant Mix Bituminous Surface Course material in compliance with city street standards. The particular type of surfacing selected for use on alleys and local streets is at the option of the developer and determined based upon the surface type of existing connecting streets, length of project, type of project, etc. Widening of existing lanes shall be done using the same surface type as the existing street.
- (4) *Drainage facilities.* Prior to the placement of street or alley pavements, adequate surface and subsurface drainage facilities (if required) shall be installed by the subdivider. All pipe used for drainage purposes shall be installed as per manufacturer's specifications.
- (5) *Standards.* All construction shall be completed in accordance with the city street and sewer standards and the improvement plans, and in a manner acceptable to the authorities having jurisdiction.
- (6) *Widths.* All specified street widths are to be measured back to back of curbs.
- (7) *Changes or amendments.* If changes from the accepted plans and specifications become necessary during construction, written approval from the director shall be secured prior to the execution of said changes.
- (8) *Compacted granular back fill material.* Compacted granular back fill material shall be required in all trenches located under pavements regardless of the type of work performed. Granular materials meeting the requirements of Type 1 or 2, Section 1007, Aggregate For Base, of the Missouri Standard Specifications for Highway Construction shall be used full depth under roadways and in shoulder areas in which the distance from the edge of the roadway surface is equal to the depth of the excavation, except twelve (12) inches of topsoil on the surface for turf establishment behind curbs. All back fill materials shall be compacted in twelve (12) inch layers in a manner as to prevent future settlement. No utilities shall be located within two (2) feet of the back of curb, except in special instances where approved by the director. This back fill must be compacted to at least ninety-five (95) percent relative density. Compacted earth is not considered an acceptable back fill material under pavement limits or within two (2) feet thereof. Pavement sub grade in all areas shall be compacted prior to paving.
- (9) *Compacted earth back fill material.* Compacted earth back fill material shall be required in all trenches located outside pavement limits and rights-of-way. Said earth back fill material shall be compacted to a minimum of ninety-five (95) percent standard proctor density at optimum moisture (2 percent). Earth back fill material shall be compacted in maximum twelve (12) inch lifts.
- (10) *Manholes.* All manholes located within pavement limits shall be poured monolithic. Manhole diamonds or box-outs are prohibited.
- (11) *Utilities.* All utilities must be installed and successfully tested prior to the paving of street and sidewalk pavements, unless waived in writing by the director. However, said paving of streets and sidewalk pavements does not constitute acceptance of any subsurface utilities or infrastructure improvements. However, in those situations where the director has permitted utilities to be installed following the placement of street pavements, necessary conduits shall be bored and jacked. In some cases, the pavement may be removed in panels and replaced, and correct installation and back fill operations shall be performed. In all cases, the installation procedure shall be submitted in writing to the director for his approval prior to the installation, and approved by the director in writing.
- (12) *Coring tests.* The developer shall core all new street and sidewalk pavements to ensure minimum thickness requirements prior to the city's acceptance of any improvements. Core samples for strength and depth shall be taken at one (1) core per every five hundred (500) linear feet of pour width, or as required by the director.

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- (13) *Storm sewer boxes.* The use of concrete block storm sewer boxes more than four (4) feet deep is prohibited. In all cases where boxes are more than four (4) feet deep, pre-cast reinforced concrete structures, as per Missouri Department of Transportation standards, shall be utilized.
- (14) *Concrete tests.* A minimum of one (1) concrete test shall be taken for each day's pour. Additional tests shall be taken for each one hundred and fifty (150) cubic yards of concrete, or at the director's request and shall include the following testing information:
  - a. Slump.
  - b. Air.
  - c. Cylinders for seven (7), fourteen (14), and twenty-eight (28) day breaks.
- (15) *Density tests.* Density tests shall be recorded for all earthwork operations. The sub grade of all street pavements shall be re-tested for compaction if the road is to be used as a haul road for concrete trucks and other heavy equipment. One (1) density test shall be taken and recorded as a minimum every one thousand (1,000) cubic yards of earth back fill placed, and every five hundred (500) square yards of pavement sub grade cut to grade. See also section 57-8 for more information.

(d) *Curbs and gutters.*

- (1) *Construction.* Curb construction for concrete pavements may be integral. Three (3) inch laid back curbs shall be constructed for residential developments. Six (6) inch stand up curbs may be required by the director for collector and arterial streets.
- (2) *Americans With Disabilities Act.* All curbs, ramps, and sidewalks shall conform to the Americans With Disabilities Act and the Revised Statutes of Missouri. All new curbs and any existing curbs which are a part of a reconstruction shall comply with these requirements. An exception may be granted where, because of surrounding buildings or other restrictions, it is impossible to conform the slope of the ramp with these requirements. In this event, the ramp shall contain a slope with as shallow a rise as possible not to exceed ten (10) percent.
- (3) *Driveways.* Driveway ramps shall not extend past the vertical face of the curb, and ramps shall be built into the curb so that the ramp and street blend to a common level. For all ramps, there shall be a gradual rounding at the bottom of the slope.

(e) *Sidewalks.*

- (1) *General.* The construction of sidewalks is required if the developer chooses to construct thirty-two (32) foot wide local streets under section 57-6(f) of the Code of Ordinances. Sidewalks may also be required by the board of aldermen if the subdivision includes, or is adjacent to, existing or proposed schools. At the time street improvements are installed the right-of-way adjacent to the surfaced portion of the street shall be graded to allow for future construction of sidewalks on one (1) side of all local streets. Such grading shall conform to city specifications and shall be required improvements. All sidewalks and ramps shall meet the requirements of the 1990 Americans with Disabilities Act as published in the Federal Register, Vol. 156, No. 144/Friday, July 26, 1992, pages 35459 through 35511. The final plans must show the sidewalks in plan, profile, and typical cross section. The sidewalk plan may be included as part of the street plan.
- (2) *Installation.* A sidewalk shall be constructed on one (1) side of local streets where the developer has opted to install a thirty-two (32) foot wide street. The installation of sidewalks shall be required as a condition prior to the issuance of any safe occupancy permit by the city for any structure located in any subdivision within which sidewalks are required. The minimum requirements for sidewalks included in the improvement plans shall be as set forth in this section.

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(3) *Design.* Residential sidewalks are to be constructed of Class 'A' Portland Cement Concrete, four (4) inches thick, except where six (6) inch thickness is required in driveways, alleys, and areas that may carry traffic. The sidewalks shall be constructed such that panels are formed using control joints that shall extend to one-fourth ( $\frac{1}{4}$ ) the depth of the sidewalk. If a grooving tool is used to form the control joint, the groove shall not be wider than one-fourth ( $\frac{1}{4}$ ) inch and edged with a one-eighth ( $\frac{1}{8}$ ) inch radius. If the control joints are sawed, the groove shall not be less than one-eighth ( $\frac{1}{8}$ ) inch wide. Whichever method of grooving is used, the control joints are to be cut such that the resulting panel lengths are not less than four (4) feet nor greater than six (6) feet. Edges of the slab shall be edged with an edging tool that has a one-fourth ( $\frac{1}{4}$ ) inch radius.

All residential sidewalks shall be four (4) feet wide and shall be installed and located two (2) feet from the back of the curb to create a greenway between the sidewalk and the street pavement. Where required, nonresidential sidewalks shall be of concrete, five (5) feet wide and four (4) inches thick, except at driveways where a seven (7) inch thickness shall be required.

(4) *Expansion joints.* Bituminous pre-formed expansion joints, three-fourths ( $\frac{3}{4}$ ) of an inch thick and precut to the width of the sidewalk, shall be indicated on the plans on each side of driveways, intersecting walks, curbs, and other locations as required. Expansion joints shall be placed at the locations specified on the plans. Expansion joints shall be placed between the sidewalk and all structures such as light standards, traffic light standards, traffic poles and columns, etc., which extend through the sidewalk.

(f) *Sanitary sewer system.* The developer shall provide for the disposal of sanitary sewage within the subdivision. The developer shall design, construct and inspect the sewer system.

- (1) Where a public sanitary sewer main is reasonably accessible, the subdivider shall provide the subdivision with a complete sanitary sewer system, including the lateral connection for each lot, connected to said sewer main and extended to the property line. All necessary construction requirements, including lift stations, shall be the responsibility of the subdivider and approved by the director, commission, and board of aldermen and shall comply with the regulations of the Missouri Department of Natural Resources.
- (2) Where no sanitary system is accessible and no plans for a sewer system have been prepared and approved, or are anticipated, the developer may, upon approval by the Missouri Clean Water Commission, director, commission, and board of aldermen, install individual disposal devices on individual lots, or a central treatment facility within the subdivision. All such individual devices shall be constructed in accordance with the regulations and requirements of the Missouri Department of Natural Resources and the board of aldermen. In no instance will the city be responsible for the construction or maintenance of any central sewage treatment system or individual septic tanks.
- (3) All sanitary sewer system installations must be air, mandrel and water tested by the developer and television tested by the city prior to the commencement of any street paving. However, the initial television test by the city shall not be considered final. After street construction, there shall be a final television test performed by the city prior to final acceptance of the complete sewer system.
- (4) All sanitary sewer construction and improvements shall comply with city sanitary sewer standards, copies of which are available in the office of the director.
- (5) The city shall pay for material costs for the over sizing of sanitary sewer lines beyond that which is required of the developer under these regulations. The final plans shall indicate the required over sizing of all sewer lines as directed by the city.

(g) *Water distribution system.* The developer shall design, construct and inspect the subdivision with a complete loop-type water distribution system adequate to serve the area being platted.

- (1) Residential water mains shall be a minimum of eight (8) inches in diameter, and fire hydrants spaced a maximum of six hundred (600) feet apart. Commercial and industrial water mains shall be a minimum

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of eight (8) inches in diameter, and fire hydrants spaced a maximum of three hundred (300) feet apart. The final plan shall not be approved by the city until the Missouri Department of Natural Resources certifies that said water supply system is in compliance with the applicable regulations of the State of Missouri and is in accordance with the city Standard Water Line Specifications or any future amendments thereto.

- (2) The system shall include a separate water tap connection for each lot. All water taps shall be installed under proposed streets, sidewalks and other paved areas prior to the commencement of any paving.
- (3) The system shall include a service line for each lot. The curb stop shall be in an off position and copper tracer wire shall be soldered to the tracer wire on the city's main water line. The tracer wire shall be extended to the customer's copper service line and soldered thereto. Each service line shall be live to the curb stop and shall be extended a minimum of three (3) feet onto the lot from the front lot line and capped with a curb stop. Service lines shall be located by stationing on the as-built plans. All service lines shall be made following testing procedures and the pressurization of said water main.
- (4) Service lines shall be located within eight (8) feet of side lot lines except in cases otherwise approved by the city administrator or his designate. In no case shall the curb stop and/or meter tile be located in driveways, sidewalks or other paved areas.
- (5) All water system construction and improvements shall comply with city Standard Water Line Specifications, copies of which are available in the office of the director.
- (6) The city shall pay the material costs for any over sizing of water mains beyond that which is required of the developer under these regulations.
- (7) The final plans shall indicate the required over sizing of all water lines as directed by the city.

(h) *Storm drainage, detention and erosion control.* Adequate surface and subsurface drainage ways for the removal of storm water, detention basins, and erosion control shall be provided by the subdivider. The purpose of this section is to ensure that storm water runoff after development does not exceed pre-development storm water runoff.

(1) *In general.*

- a. *Applicability.* All new development within the city shall be subject to the provisions hereof.
- b. *Fee in lieu of storm water facility construction.* Unless the increase amount or velocity of storm water generated by a development of under three (3) acres will cause a major impact on down stream facilities or water courses, a developer/builder shall pay to the city a fee based on the following scale. Said fee shall be known as "storm water credits."

Lot Size/ Area (Acres)	Commercial/ Industrial Fee	Residential Fee
0.00—0.50	\$ 400.00	\$120.00
0.50—1.00	640.00	104.00
1.00—1.50	1,080.00	98.00
1.50—2.00	1,120.00	72.00
2.00—2.50	1,360.00	56.00
2.50—3.00	1,600.00	40.00

In the event it is determined by the director of public works or his designate that the increase flow or velocity of storm water generated by a three (3) acre or less development/subdivision

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will cause a major effect on downstream facilities or water course, the builder/developer shall comply with the following provisions hereof. The decision of the director of public works shall be final.

- c. *Scope of storm water system.* All developments and subdivisions shall be subject to the provisions hereof. On all developments over three (3) acres in area and on those under three (3) acres which the director of public works has determined may create major impact on downstream facilities or water courses, the extent of the storm water system required shall be based upon an analysis of need prepared by a registered professional engineer in the form of a design report. The design report shall be approved by the director in the preliminary design phase. The development's storm water system shall include a storm drainage system and a detention basin(s) as provided herein. On all developments and subdivisions under three (3) acres, except as otherwise provided herein, the developer shall be required to pay storm water credits as provided herein.
- d. *Storm water plans/maintenance.* The developer shall design storm water detention/retention basins or other storm water control facilities, which said facilities shall be incorporated into subdivision lots thereby providing a method of permanent maintenance by the landowner. The purpose of this approach is to provide practical and aesthetically pleasing storm water control which incorporates basins into areas which can be used by the landowner. Developer shall dedicate permanent storm water basin easements as required by city.
- e. *Design criteria.* The minimum design criteria to be used to design and construct the storm water system shall be established by the following publications, all of which establish minimum design criteria:
  1. Missouri Department of Transportation Design Manual—Chapter IX - Hydraulics and Drainage. (Section 9.02 current edition).
  2. Missouri Department of Natural Resources Manual—Protecting Water Quality.
  3. Missouri Department of Natural Resources—Storm Water Permit Requirements for Land Disturbance Activities PUB002009 current edition.
  4. Environmental Protection Agency—Storm Water Management for Construction Activities—EPA 833-R-92-001 current edition.When conflicts arise between manuals or any other city, state or federal regulation, the most stringent criteria shall control.
- f. *Design storm frequencies.* The minimum rain fall event to be utilized in determining the intensity of rainfall for storm flow calculations shall be based on the following:

Land Use/Zoning	Storm Return Frequency (Year Storm)	Condition
Residential	10	Developed
Commercial	15	Developed
Industrial	15	Developed
Parks, Greenbelts, etc.	10	Developed
Open Channels (see note 1)	25	Developed
Flood Plains	100	Developed
<i>Street Culvert Crossings:</i>		
Local	10	Developed
Collector	25	Developed
Arterial	50	Developed

Tributary	50	Developed
Detention Basin Discharge	2, 10, 100	Pre-Developed

g. *Permanent storm water easement.* Permanent storm water easements are required to provide adequate access for construction, inspection, and maintenance of storm drainage system components. Easements shall be dedicated to the city. Storm water easements shall have minimum widths as described below. A wider easement width may be required at structures, or if the easement is shared with other utilities or as determined by the city engineer.

1. Storm sewer easements shall be fifteen (15) feet wide or the outside dimension of the conduit plus ten (10) feet (centered on the conduit), which ever is greater. A wider easement will be required if the depth of cover exceeds four (4) feet.
2. Improved open channel easements shall be as wide as the top of bank width plus ten (10) feet on each side, and shall be continuous to the end of the channel.
3. Natural open channel shall be the area between the high bank lines of the channel, plus additional width on each side of the channel as deemed necessary by the city to allow access for maintenance equipment. The minimum width for a natural open channel easement is thirty (30) feet.
4. General easements. In subdivisions, the detention basin, access roads or paths, control structures and outfall pipes are to be located in permanent utility easements dedicated to the city.

h. *Storm water plan and design review fees.* For purposes of evaluation, projects will be classified in four (4) categories according to acreage:

Class (Acres)	Review Fee
(1) Less than 10	\$ 80.00
(2) 10 to 25	160.00
(3) 25 to 100	240.00
(4) > 100	300.00

This fee shall accompany the storm water plan.

(2) *Storm drainage system.* Storm drainage systems required by this section shall use surface ditches, storm drains, guttering and other appurtenances which may be required to accomplish the intent hereof.

a. *Calculations.* In developing a storm water drainage system the development calculations shall be based on the maximum of one (1) fifteen (15) minute rainfall using the following:

Watershed Area (acres)	Method
0—25	Rational (see Note 1)
> 25	Technical Release 55 (TR-55) (see Note 2)

Note 1: Rational method shall be as identified in Missouri Department of Transportation Design Manual Chapter IX—Hydraulics and Drainage current edition.

Note 2: Technical release 55 (TR-55) shall be as identified in the NRCS Urban Hydrology for Small Water Sheds.

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b. *Open channels.*

1. Open channels, natural or improved, may be placed to the rear or side of properties upon approval of the city engineer where the design provides adequate protection to the existing and future property and structures. Such protection shall be through the provision of a fifty (50) year flood plain setback and a minimum distance from the top of bank to the setback of thirty (30) feet. This drainage setback line shall be shown on the final plat. Permanent vegetation, existing ground elevation, and grades within the thirty (30) foot setback area shall be left intact and undisturbed on channels with watersheds of one hundred (100) acres or more unless modification is approved in writing by the director or his designate.
2. Area inlets shall be required behind the curbs to intercept overland flows greater than one (1) cfs to prevent flows from crossing sidewalks and/or curbs.
3. Existing open channels may have storm return frequency waived in writing by the public works director or his designate to protect existing vegetation on stream bank. Bridges shall be designed per MoDOT criteria.

c. *Curb inlet, junction boxes and other points of entry.* Curb inlets shall be installed at intersections and as required at intermediate points to limit gutter flow width during runoff occurring from the design peak discharge from the tributary watershed area to that which will not encroach on the following center width of streets:

Street Type	Center Width (Feet)
Arterial	24
Collector	14
Local	10

Inlets, junction boxes and other points of entry shall be per the city's inlet details and as approved by the city engineer. When locating inlets in sump locations consideration must be made with respect to the major drainage system. A one hundred (100) year design event shall not cause buildings to flood in the event that a single inlet becomes blocked. In new developments the one hundred (100) year design storm elevation shall be mapped on the final plat as a building set back. Overland relief to another inlet or surface channel shall be provided to protect property.

d. *Enclosed systems.*

1. The outlet of an enclosed system shall discharge into an open channel a minimum of fifty (50) feet upstream of an adjacent property, or sufficient energy dissipation is provided to negate the increases posed by development as approved by the city engineer.
2. Building gutter drainage systems may not be discharged directly into the city's enclosed system.
3. If development plans call for the enclosure of an existing, natural drainage way which carries greater than fifty (50) cfs during the design storm event, the enclosure shall be sized for a fifty (50) year twenty (20) minute storm event. Two (2) feet minimum freeboard shall be required. Upstream inundation shall be checked. Where inundation extends beyond the site property line and exceeds the design water surface elevation of the natural drainway/channel, a backwater ponding easement from the affected off-site property owner(s) shall be required prior to final plan approval. A reduction in the design storm

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requirement may be granted by the city engineer when existing off-site, downstream storm sewer would be smaller than the required on-site, upstream sewer and the downstream storm sewer are not designed to intercept/pass the fifty (50) year twenty (20) minute storm event.

- e. *Detention basin.* The developer's professional engineer shall provide calculations for a detention basin or basins for the increased storm water runoff resulting from the entire area of the proposed development which may include wet or dry bottom reservoirs.
  1. *Storage volume.* The volume of storage provided in the detention basin shall be sufficient to control the excess storm water runoff added to the watershed from development. A volume calculated should provide for the attenuation of the post-developed discharge to a rate which shall not exceed the pre-developed peak discharge rate. Streets may not be used for storage volume.
  2. *Release rate.* A release rate shall be calculated for a two (2), ten (10) and one hundred (100) year storm as described in subsection (1)(c) for the proposed subdivision in the condition prior to the proposed development. The storm water release rate shall not exceed at any time, the allowable flow rate of downstream storm water facilities. In the event it does, the release rate on the basin shall be reduced to the allowable rate and the storage volume increased.
  3. *Construction phase.* The two (2) year storm design referred to above will only be used during the construction phase of the development for erosion control. As a minimum a silt basin to handle the two (2) year storm shall be constructed at the location of the detention basin prior to the start of major earth moving operations.
  4. *Time of concentration and infiltration.* The design of the development shall be such that the time of concentration is maximized to allow for maximum infiltration.
  5. *Emergency spillway.* An emergency spillway shall be required to release the runoff from a storm greater than a one hundred (100) year twenty-four (24) hour storm as required by regulations from the state department of natural resources.
  6. *Freeboard.* Detention basin shall require a minimum of 2 feet of freeboard from one hundred (100) years storm overflow elevation. Wet bottom facilities may require increased freeboard to prevent damaging from flooding down stream during low frequency storms.
  7. *Dam design.* The professional engineer will be required to submit a dam design for basins greater than one hundred (100) acre feet or as requested by the director. Dams with a height of thirty-five (35) feet or greater will require approval from the Missouri Department of Natural Resources.
  8. *Landscaping plan.* A landscaping plan shall be required on the basin to provide an aesthetically pleasing, park environment for the public or private landowner. The landscaping plan shall be designed and planted by the developer, approved by the city, and maintained by the developer until maintenance guarantee expires.
- f. *Plan adherence and enforcement.* The applicant shall be required to adhere strictly to the storm water management plan as approved. Any changes or amendments to the plan must be approved by the public works director or his designate in accordance with the procedures set forth in this chapter obtaining storm water management plan approval. Public works director or his designate shall be, and are herein, granted inspection rights and right of entry privileges in order to ensure compliance with the requirements of this chapter.

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1. *Approved projects.* The public works director or his designate shall carry out periodic inspections of the project site to insure compliance with this chapter. If it is determined that the project is not being carried out in accordance with the approved storm water management plan, the public works director or his designate is authorized to:
  - i. *Written notice.* Issue written notice to the applicant or owner, specifying the nature and location of the alleged noncompliance, with a description of the remedial actions necessary to bring the project into compliance within a reasonable specified time;
  - ii. *Stop-work order.* Issue a stop-work order directing the applicant or owner to cease and desist all or any portion of the work which violates the provisions of this chapter, if the remedial work identified in the "written notice" is not completed within the specified time.
2. *Unapproved projects.* With respect to any development or development activity determined by the public works director or his designate to be subject to this ordinance, and being carried out without approval, the public works director or his designate is authorized to follow procedures for corrective action as described for approved projects except that after a stop-work order is issued, the owner does not bring project into compliance, the violation goes directly to the penalty phase.
  - i. *Revocation of approval.* Should the applicant or owner not bring the project into compliance with the written notice and stop-work order, he shall then be subject to immediate revocation of his storm water management plan approval and to the penalties described in the following section.
  - ii. *Appeal.* Any notice, order or revocation issued pursuant to the above subsections shall become final unless the person named therein requests, in writing, no later than ten (10) days after the date of such notice, order or revocation is served, a hearing before the board of aldermen.
3. *Penalties for violation.* Violation of the provisions of this chapter or failure to comply with any of its requirements, including conditions and safeguards established in connection with variances or special use permits, shall constitute a misdemeanor. Any person who violates this chapter or fails to comply with any of its requirements shall upon conviction thereof be fined not more than five hundred dollars (\$500.00) or imprisoned for not more than ninety (90) days, or both, and in addition, shall pay all costs and expenses involved in the case. Each day such violation continues shall be considered a separate offense.
- g. *Liability disclaimer.* The performance standard and design criteria set forth herein establish minimum requirements which must be implemented with good engineering practice and workmanship. Use of the requirements contained herein shall not constitute a representation, guarantee, or warranty of any kind by the city or its officers and employees of the adequacy or safety of any drainage management structure or use of land. Nor shall the approval of a storm water management plan and the issuance of a permit imply that land uses permitted will be free from damages caused by storm water runoff. The degree of protection required by these regulations is considered reasonable for regulatory purposes and is based on historical records, engineering and scientific methods of study. Larger storms may occur or storm water runoff heights may be increased by manmade or natural causes. Enforcement of these provisions, therefore, shall not create liability on the part of the municipality or any officer of the municipality with respect to any legislative or administrative decision lawfully made hereunder, nor shall compliance relieve an owner, developer, developer's engineer, and/or permittee from responsibility under any circumstances where liability would otherwise exist.

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- h. *Erosion control.* The developer shall comply with the erosion control ordinances of the city found at sections 21-1, et seq. Said ordinances have been considered along with the 2000 revision of these subdivision regulations, and have been amended to conform with city's subdivision regulations after planning and zoning review and required public hearing. Recodification herein would be superfluous.
- (i) *Public utilities.* The developer shall design and construct the utility infrastructure necessary to serve his current development and any future development planned by said developer on his master/preliminary plan.
  - (1) *Over sizing.* The developer shall oversize the infrastructure as determined by the director as necessary for future expansion of the city's utility system, provided however, that the cost of said materials oversizing shall be paid by the city. This includes but is not limited to lift stations and appurtenances thereto.
  - (2) *Electric distribution.* All electrical power to subdivisions shall be installed as set forth in section (n) Electrical distribution system of this chapter.
  - (3) *Underground facilities.* Where gas, telephone and electric service lines are placed underground throughout the subdivision, the mains, lines, cables and conduits shall be located within the easements or public right-of-way in a manner which will not conflict with other underground services. All controls, valves, transformers and terminal boxes shall be located so as not to be hazardous to the public.
  - (4) *Excavations.* All excavations for public utilities made under paved areas shall be properly back filled with approved granular materials, and street repairs shall be completed as soon as possible to restore the street surface. All such repairs or reconstruction shall be completed at the expense of the developer or utility involved. No excavation of any street may be undertaken until all necessary permits are obtained. All utility excavations shall be constructed under the Missouri Standard Specifications for Highway Construction, and the Manual of Uniform Traffic Control Devices (MUTCD).
  - (5) *Overhead lines.* When, in cases of variance, electric and telephone lines are to be carried on overhead poles, rear and side lot easements or public rights-of-way shall be utilized wherever possible.
  - (6) *Inspection.* The city shall retain the right to inspect all city utilities prior to commencement of back filling operations.
  - (7) *Notification.* The city shall be contacted no less than twenty-four (24) hours in advance of utility work being performed.
  - (8) *Final plans.* Final plans must include, at a minimum, all utilities such as gas, cable television, and telephone lines, their locations, sizes and other pertinent information as they are to be constructed within the development.
- (j) *Gas.* If the developer proposes that natural gas be provided as fuel for home heating, the developer or gas supplier shall install all lateral lines necessary for distribution.
- (k) *Street lighting.* Street lighting shall be installed in all subdivisions developed within the city in accordance with the following design and installation standards.
  - (1) Each developer shall submit a street lighting plan clearly set forth on the final plan submitted to the director. The street lighting plan shall be reviewed and approved by the director or his designated representative as part of the city staff review.
  - (2) In a subdivision a lighting unit shall be installed at each intersection and cul-de-sac turnaround.
  - (3) Lighting standards shall be staggered longitudinally a minimum of one hundred fifty (150) feet and a maximum of four hundred fifty (450) feet apart.

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- (4) Each lighting unit shall be set back and centered on a point three (3) feet to four (4) feet from the rear curb line.
- (5) Mounting height shall be a minimum of twenty (20) feet from pavement to luminaire.
- (6) Lamp posts shall be round tube type of galvanized steel or black fiberglass and a minimum of twenty (20) feet in height. Lighting brackets or mast arms shall be a minimum of six (6) feet in length and made of aluminum alloy or galvanized steel.
- (7) Lamps or luminaires shall be as specified in chapter 41 of this Code or that recommended by the director or his designate.
- (8) Installation of lighting shall be independently contracted by the developer. Inspection of installation shall be made by the director or his designate and city crews shall make all final connections to the city's power source.
- (9) All street lighting shall be installed in accordance with the National Electrical Code edition adopted by the city at the time of installation. All electric lines, poles, and fixtures shall be assembled and wired through the base of the pole.
- (10) In all cases the subdivider shall pay the cost of all materials, equipment, accessories, and installation necessary for street lighting within the subdivision as well as any trenching, if necessary.

(l) *Landscape development/building gutter drains.* All unpaved or otherwise unimproved areas within the public rights-of-way, or public use areas, shall be landscaped in a manner approved by the commission to include at a minimum seeding with permanent grasses and mulching, or sodding.

- (1) Where shrubs are required for the purpose of screening, specimen, density and other pertinent features shall be approved by the planning commission.
- (2) All common areas and lots (including right-of-ways and easements) are to be mowed and maintained by the developer until such a time as said lots are sold to individual interests.

(m) *Subdivision monumentation.* All property surveys shall be conducted according to the current minimum standards for property surveys, as set out by the Missouri Land Survey Authority.

- (1) All monuments shall be established and installed to meet the requirements for monumentation of the Missouri Land Survey Authority.
- (2) Permanent markers shall be set by the subdivider:
  - a. At the intersection of all lines forming angles in the boundary of the subdivision.
  - b. At the intersection of street right-of-way lines at the beginning and end of all curves along street property lines.
  - c. At all lot corners.

(n) *Electrical distribution system.*

- (1) *In general.* All power in new subdivisions shall be installed in accordance with the following design and installation standards:
  - a. All power shall be installed underground, except by variance in cases of exceptional conditions as determined by the director.
  - b. Each developer shall submit a comprehensive power distribution plan clearly set forth on the final plan submitted to the director. The plan shall be reviewed and approved by the director or his designated representative as part of the city staff review.

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- c. All power installations shall be installed in accordance with the National Electrical Code edition adopted by the city at the time of installation and any other applicable codes.
- d. All required fees shall be paid by the developer prior to the commencement of the city's final connection procedures.

(2) *Developer's responsibility.*

- a. The developer shall provide, at its cost, a complete underground electric system, including trenching, conduit, transformers, pedestals, and other appurtenance therefor. The electric system installation by the developer shall consist of all conduits, manholes, pulling boxes, transformers, transformer pads, switch gear pads, pedestals, and pedestal bases, poles, and other required subsurface and above surface structures. Electric system shall be in accordance with the electric system specifications in chapter 41 of this Code.
- b. The electric conduit system shall be installed and accepted prior to the commencement of any street paving, except by variance in cases of exceptional conditions as determined by the director.

(3) *City's responsibility.*

- a. The city will provide and terminate all primary and secondary voltage and service cables at the expense of the developer as specified in chapter 41 of this Code. The city shall make all permanent connections to meter bases, transformers, pedestals, and poles. The city shall own, operate, and maintain the entire distribution system within the subdivision, including both the portion installed by the city and that installed by the developer.
- b. Upon application by the developer or customer, the city shall connect temporary electric service to the customer's private trim in accordance with city ordinance.

(Ord. No. 02-45, § 1, 7-1-02; Ord. No. 02-55, § 2, 8-5-02; Ord. No. 03-98, § 5, 8-18-03; Ord. No. 05-121, § 1, 10-3-05; Ord. No. 14-05, §§ 1, 2, 1-21-14)

**Appendix 5-2**  
City Ordinance Chapter 21 Section 109

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**Sec. 21-109. Watercourse protection.**

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation and other obstacles that would pollute, contaminate or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse so that such structures will not become a hazard to the use, function or physical integrity of the watercourse.

(Ord. No. 10-44, § 1, 5-3-10)

**Appendix 5-3**  
City Ordinance Chapter 21 Section 43

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### **Sec. 21-43. Principles and standards.**

- (a) All excavations, grading or filling shall have a finished grade not to exceed a 3:1 (three (3) horizontal to one (1) vertical) slope. Steeper grades may be approved by the city engineer if the excavation is through rock or the excavation or fill is protected (a designed head wall or toe wall may be required). Retaining walls that exceed a height of four (4) feet shall require the construction of safety guards as identified in the Building Code of the City of Jackson or subsequent amendments thereto. Permanent safety guards will be constructed in accordance with the adopted Building Code of the City of Jackson.
- (b) Grading plans for sites that exceed one (1) acre shall provide for sediment or debris basins, silt traps or filters, staked straw bales, a combination of these measures or other measures approved by the city engineer to remove sediment from runoff waters. The design to be approved by the public works director. Temporary siltation control measures (structural) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
- (c) Where natural vegetation is removed during grading, vegetation shall be re-established in such a density as to prevent erosion. Permanent type grasses shall be established as soon as possible or during the next seeding period after grading has been completed.
- (d) When grading operations are completed or suspended for more than thirty (30) days between permanent grass seeding periods, temporary cover shall be provided according to the public works director's recommendation.

All finished grades (areas not to be disturbed by future improvements) in excess of (5:1) slopes (five (5) horizontal to one (1) vertical) shall be mulched at the rate of one hundred (100) pounds per one thousand (1,000) square feet when seeded.

- (e) Provisions shall be made to accommodate the increased runoff caused by changed soil and surface conditions during and after grading. Unvegetated open channels shall be designed so that gradients result in velocities of two (2) feet per second (fps) or less. Velocities in permanently vegetated open channels shall not exceed five (5) fps. Unvegetated open channels with velocities more than two (2) fps and less than five (5) fps shall be established in permanent vegetation by use of commercial erosion control blankets or lined with rock riprap or concrete or other suitable materials as approved by the public works director. Detention basins, diversions, or other appropriate structures shall be constructed to prevent velocities above five (5) fps.
- (f) Ground adjoining development sites (lots) shall be provided with protection from accelerated and increased surface water, silt from erosion, and any other consequences of erosion. Runoff water from developed areas (parking lots, paved sites, and buildings) above the area to be developed shall be directed to diversions, detention basins, concrete gutters, and/or underground outlet systems. Sufficiently anchored straw bales may be substituted with the approval of the public works director.
- (g) Development along natural watercourses shall have a minimum thirty (30) foot general maintenance and drainage easement from the top of the existing stream bank. Development shall not encroach on said thirty (30) foot easement. The watercourse shall be maintained and made the responsibility of the appropriate legal entity. Permanent vegetation should be left intact. Variances will include designed stream bank erosion control measures and shall be approved by the public works director. FEMA guidelines shall be followed where applicable regarding site development in flood plains.
- (h) All lots shall be seeded and mulched or sodded before an occupancy permit shall be issued except that a temporary occupancy permit may be issued by the director or his designate in cases of undue hardship because of unfavorable ground conditions.

(Ord. No. 3317, § 1, 8-1-94; Ord. No. 01-70, § 1, 10-1-01; Ord. No. 05-118, § 3, 9-19-05; Ord. No. 12-44, § 3, 6-4-12)

**Appendix 5-4**  
Example Post-Construction BMP Checklist

STORMWATER MANAGEMENT FACILITY MAINTENANCE INSPECTION CHECKLIST							
STORMWATER PONDS							
Circle Type: P-1: Micropool ED Pond P-2: Wet Pond P-3: Wet ED Pond P-4: Multiple Pond System P-5: Pocket Pond DET: Detention							
Location: _____				P Job Number: _____			
Owner Change since last inspection? Yes No				Inspector: _____			
Owner Name: _____				Date of Inspection: _____			
Owner Address: _____				Owner Phone Number: _____			
Site Conditions: _____							
INSPECTION RATING SYSTEM							
<p>0 = Good condition. Well maintained, no action required. Satisfactory Performance.</p> <p>1 = Moderate condition. Should monitor. Satisfactory Performance.</p> <p>2 = Degraded condition. Routine maintenance and repair needed. Unsatisfactory Performance.</p> <p>3 = Serious condition. Immediate need for repair or replacement. Unsatisfactory Performance.</p>							
<p><b>NOTE TO INSPECTOR:</b> All personnel entering any confined spaces must take appropriate safety measures and follow applicable OSHA regulations.</p>							
INSPECTION ITEMS				RATING		COMMENTS	
Overall Drainage Area Conditions:							
A. INLETS (If not piped, identify as overland flow)							
Provide stable conveyance into facility?	0	1	2	3	N/A		
Excessive trash/debris/sediment accumulation?	0	1	2	3	N/A		
Evidence of erosion?	0	1	2	3	N/A		
B. PRETREATMENT (if applicable)							
Excessive trash/debris/sediment accumulation?	0	1	2	3	N/A		
Excessive Sediment ? If >50% of volume is excessive.	0	1	2	3	N/A		
Evidence of clogging?	0	1	2	3	N/A		
Dead vegetation/exposed soil?	0	1	2	3	N/A		
Evidence of erosion?	0	1	2	3	N/A		
C. FACILITY							
Maintenance access to facility?	0	1	2	3	N/A		
Evidence of animal droppings around basin? (geese/duck/dog, etc)	0	1	2	3	N/A		
Condition of structural components?	0	1	2	3	N/A		
Excessive trash/debris/sediment accumulation?	0	1	2	3	N/A		
Excessive Sediment ? If >50% of volume is excessive.	0	1	2	3	N/A		
Low orifice trash/debris accumulation causing blockage?	0	1	2	3	N/A		
Berms/Embankments, overall condition?	0	1	2	3	N/A		
Cattails removed?	0	1	2	3	N/A		
Check all issues observed:	Evidence of erosion <input type="checkbox"/>				Cracking, bulging or sloughing <input type="checkbox"/>		
	Presence of woody vegetation <input type="checkbox"/>				Evidence of animal burrows <input type="checkbox"/>		
D. OVERFLOW/OUTLET STRUCTURE							
Outlets provide stable conveyance out of facility?	0	1	2	3	N/A		
Excessive trash/debris/sediment accumulation?	0	1	2	3	N/A		
Evidence of erosion at/around?	0	1	2	3	N/A		
E. HAZARDS							
Complaints from local residents? (describe if any)	0	1	2	3	N/A		
Any public hazards observed? (describe if any)	0	1	2	3	N/A		
F. CORRECTIVE ACTIONS*							
*If any 2-3 ratings are given in Sections A-E of this checklist, list corrective actions recommended or completed during inspection.							
CORRECTIVE ACTIONS			RECOMMENDED TO OWNER		COMPLETED AT TIME OF INSPECTION		
G. PHOTOGRAPHS							
Please attach photographs, with descriptions, showing current condition of the system and any deficiencies noted in this inspection.							

STORMWATER MANAGEMENT FACILITY MAINTENANCE INSPECTION CHECKLIST						
RAINWATER HARVESTING						
Circle Type: Cistern Dry Well Rain Barrel						
Location: _____			P Job Number: _____			
Owner Change since last inspection? Yes No			Inspector: _____			
Owner Name: _____			Date of Inspection: _____			
Owner Address: _____			Owner Phone Number: _____			
Site Conditions: _____						
INSPECTION RATING SYSTEM						
0 = Good condition. Well maintained, no action required. Satisfactory Performance. 1 = Moderate condition. Should monitor. Satisfactory Performance. 2 = Degraded condition. Routine maintenance and repair needed. Unsatisfactory Performance. 3 = Serious condition. Immediate need for repair or replacement. Unsatisfactory Performance.						
<u>NOTE TO INSPECTOR: All personnel entering any confined spaces must take appropriate safety measures and follow applicable OSHA regulations.</u>						
INSPECTION ITEMS	RATING			COMMENTS		
Overall Drainage Area Conditions:						
<b>A. INFLOW POINTS (i.e. downspouts, inlets, etc.)</b>						
Inflow points (e.g. downspouts, inlets) provide stable conveyance?	0	1	2	3	N/A	
Excessive trash/debris/sediment accumulation (in gutters, etc.)?	0	1	2	3	N/A	
Filters are clogged or full?	0	1	2	3	N/A	
<b>C. FACILITY</b>						
Maintenance access to facility?	0	1	2	3	N/A	
Informational signs present? (if applicable)	0	1	2	3	N/A	
First flush diverter/filter/overflow device full or clogged?	0	1	2	3	N/A	
Excessive trash/debris/sediment accumulation?	0	1	2	3	N/A	
Evidence of leakage?	0	1	2	3	N/A	
<b>D. OVERFLOW/OUTLET STRUCTURE</b>						
Outlets provide stable conveyance out of facility?	0	1	2	3	N/A	
Excessive trash/debris/sediment accumulation?	0	1	2	3	N/A	
Is outlet clogged?	0	1	2	3	N/A	
Evidence of erosion at/around?	0	1	2	3	N/A	
<b>E. HAZARDS</b>						
Complaints from local residents? (describe if any)	0	1	2	3	N/A	
Any public hazards observed? (describe if any)	0	1	2	3	N/A	
<b>F. CORRECTIVE ACTIONS*</b>						
*If any 2-3 ratings are given in Sections A-E of this checklist, list corrective actions recommended or completed during inspection.						
CORRECTIVE ACTIONS	RECOMMENDED TO			COMPLETED AT TIME OF INSPECTION		
	OWNER					
<b>G. PHOTOGRAPHS</b>						
Please attach photographs, with descriptions, showing current condition of the system and any deficiencies noted in this inspection.						

**Appendix 6-1**  
Form for Tracking Employee Training

# Employee Tracking Form

Page 1 of 1

## ***Training Calendar***

Training Type		Schedule
IDDE	Illicit Discharge Detection and Elimination	4th quarter each year
SWPPP	Construction Site Stormwater Pollution Inspection	2nd quarter each year
FIP	Fertilizer, Insecticide, and Pesticide	2nd quarter each year
GH	Good Housekeeping	1st quarter each year

**Note:** New employees will complete all applicable trainings with their onboarding process.

## ***Tracking Form***

## **Appendix 6-2**

### **Pollution Prevention and Good Housekeeping for Municipal Operations by Facility**

**Pollution Prevention and Good Housekeeping for Municipal Operations by Facility**

Page 1 of 2

Facility Name	Address	Subject to NPDES?	Applicable Operations that May Pose a Pollutant Risk	BMP	Person Responsible and Inspection and Documentation Procedures	Iterative Process Evaluation
Russell Heights Cemetery	435 S Farmington Rd	No				
City Yard – Electric Department Outdoor Storage	420 Florence St	No	New equipment storage. Bad or leaking equipment storage.	Storage of good and new equipment outside. Bad or leaking equipment is stored in a tub and then hauled away by a hired company to be disposed properly.	Electric Department Supervisor inspects outdoor storage monthly and marks down findings in logbook.	By observation, evaluate effectiveness of pollution prevention at site annually.
City Yard – Line Crew Shed	420 Florence St	No	None.	None.	Not applicable.	Not applicable.
City Yard – Power Plant	420 Florence St	No	Storage of waste oil and new lubricant oil.	Secondary containment is provided for outdoor above-ground tanks containing waste oil. New lubricant oil is also stored within secondary containment and drums.	The Power Plant site (which includes outdoor tanks and one substation) is inspected weekly and a checklist is completed.	By observation, evaluate effectiveness of pollution prevention at site annually. Consider changes if necessary. Document evaluation in the annual Stormwater report to MDNR.
			Disposal of waste oil.	Waste oil is picked up and disposed properly by contracted service.		
			Storage of pool chemicals.	Soda ash and cyanuric acid for the pool are stored indoors at the Power Plant.		
City Yard – Fueling Station	420 Florence St	No	Storage of fuel.	Secondary containment is provided for the fuel tanks.	The fueling station is inspected by Fleet Maintenance Supervisor monthly, as a part of their MIRMA checklist.	By observation, evaluate effectiveness of pollution prevention at site annually.
			Fueling vehicles.	Fleet maintenance maintains fuel and documents usage.		
City Yard – Washing Station	420 Florence St	No	Vehicle washing.	Vehicle washing occurs on the concrete pad over a drain connected to the sanitary sewer system.	The washing station is inspected by Fleet Maintenance Supervisor monthly, as a part of their MIRMA checklist.	By observation, evaluate effectiveness of pollution prevention at site annually. Consider changes if necessary. Document evaluation in the annual Stormwater report to MDNR.
Remote Power Plant Sites	1013 W Main St 3422 Matthew St 4520 E Jackson Blvd	No	None.	None.	Not applicable.	Not applicable.
Recycling Center	508 Eastview Ct	No	Temporary storage of material.	All recycling is kept indoors except for glass that is kept in a container. Empty glass containers are not a significant stormwater problem.	The site is inspected monthly by the Sanitation Supervisor and a checklist is completed.	By observation, evaluate effectiveness of pollution prevention at site annually. Consider changes if necessary. Document evaluation in the annual Stormwater report to MDNR.
			Collection of material.	The truck seals are checked when the vehicles are washed (offsite).		
Fleet Maintenance Building	412 Florence St	No	Storage and disposal of waste oil and waste antifreeze.	Secondary containment provides protection for waste oil tank, waste antifreeze barrel. Those items are picked up by a contracted company and disposed of properly. The Fleet Maintenance Supervisor does not let the waste oil tank get over half full because the barrels take up some of the containment volume.	The site is inspected monthly by the Fleet Maintenance Supervisor and a checklist is filled out. Receipts from waste picked up are kept by the Fleet Maintenance Supervisor.	By observation, evaluate effectiveness of pollution prevention at site annually. Consider changes if necessary. Document evaluation in the annual Stormwater report to MDNR.
			Storage and disposal of solvents.	Solvents are stored inside. Waste solvents are also taken away by a contracted company and disposed properly.		
			Storm drain inside the building.	The floor drain inside the fleet maintenance building flows to a storm channel. Special care is taken to make sure oil or other pollutants do not go into the drain inside the building. The City Engineer is looking into solutions to route this drain to the sanitary system.		
			Spills.	A spill kit is located at the site as well as in the vehicles when going out for an emergency repair. The spill kits are used when spills occur.		
Well 7	504 Cane Creek Rd	No	None.	None.	Not applicable.	Not applicable.

**Pollution Prevention and Good Housekeeping for Municipal Operations by Facility**

Page 2 of 2

Facility Name	Address	Subject to NPDES?	Applicable Operations that May Pose a Pollutant Risk	BMP	Person Responsible and Inspection and Documentation Procedures	Iterative Process Evaluation
Street Department Building	412 Florence St	No	Street deicing is performed by the Street Department.	The Street Department minimizes application of deicing when it is necessary.	Street Department Supervisor records the location and type of work completed each day.  MIRMA checklist is completed monthly.	By observation, evaluate effectiveness of pollution prevention at site annually. Consider changes if
Wastewater Treatment Facility	2230 Lee Avenue	Yes (MO-0022853)	Stormwater discharges are permitted under NPDES Permit.	Stormwater discharges are permitted under NPDES Permit.	No inspection nor documentation needed.	By observation, evaluate effectiveness of pollution prevention at site annually. Consider changes if necessary. Document evaluation in the annual report to MDNR.
Park Maintenance Building	952 E Independence St 800 Stoneyledge Dr	No	Storage of diesel.  Storage of chemicals.  Storage of waste oils.  Diesel fuel, chemical, or oil spills.  Equipment maintenance.  Equipment washing.  Application of pesticides and herbicides.  Application of fertilizer.	A diesel tank outside has secondary containment.  All chemicals are stored inside.  Waste oils are stored inside until they are transported to the fleet maintenance building.  A spill kit is located on site.  Equipment maintenance occurs inside.  Equipment such as tractors and lawnmowers are washed inside over a drain that is connected to the sanitary sewer.  Pesticides and herbicides are applied by staff that are trained in their use.  Fertilizer is seldom used; it is only applied at turf repair sites and replanting sites.	The park maintenance facility is inspected monthly and a checklist is completed.	By observation, evaluate effectiveness of pollution prevention at site annually. Consider changes if necessary. Document evaluation in the annual Stormwater report to MDNR.
Salt Storage	810 Emma St	No	Salt storage.  Brine/beet juice storage.  Excess fill.  Vehicle and equipment storage.	Salt is stored under cover and within block walls to prevent running off.  Brine/beet juice is stored in tanks next to the salt storage area.  An area of the site is used for dumping small amounts of excess fill from Street Department work. This area is approximately 150 feet from a stormwater channel. The space between the dumping site and the channel is vegetated.  A Street Department garage is located on this site for indoor vehicle and equipment storage.	The site is inspected monthly and a checklist is completed.	By observation, evaluate effectiveness of pollution prevention at site annually. Consider changes if necessary. Document evaluation in the annual Stormwater report to MDNR.
Well 7	504 Cane Creek Rd	No	The site is used for large scale dumping of excess fill from Street Department work.	The site has a land disturbance permit for filling. The area around the fill is vegetated, providing a buffer that controls any potential sediment movement.	The site is inspected monthly and a checklist is completed.	
City Pool	1003 North High St	Yes (MOG760 161)	Storage of pool chemicals.  Draining pool.	Chlorine is stored indoors in a separate locked storage room. No chemicals are stored outside.  The pool is dechlorinated before draining it to the creek.	The site is inspected monthly and a checklist is completed.	By observation, evaluate effectiveness of pollution prevention at site annually. Consider changes if

**Appendix 7-1**  
2021 Annual Report



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
WATER PROTECTION PROGRAM  
**MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)  
STORMWATER MANAGEMENT PLAN REPORT**

FOR OFFICE USE ONLY	
PROJECT ID NUMBER	
DATE RECEIVED	

**Part A – MS4 PERMIT HOLDER INFORMATION**

1. MS4 NAME	2. NPDES PERMIT NUMBER	3. MS4 UNIQUE ID NO.	
4. ADDRESS	5. CITY	6. STATE	7. ZIP CODE
8. TELEPHONE NUMBER WITH AREA CODE	9. EMAIL		
10. NAME OF MS4 CONTACT PERSON			

11. Have any areas of the MS4 been added or removed from the MS4 jurisdiction due to annexation or other legal means since the most recent permit application (renewal, new, modification), or most recent MS4 stormwater management plan report?

Yes  No

If yes, please include a map along with a brief description as an attachment.

**Part B – REPORTING PERIOD**

1. Is your MS4 subject to a TMDL?

Yes  No

If yes, you are required to submit the MS4 report annually. Reports are due Feb. 28 each year. For the first reporting period, the beginning date will be June 13, 2016, and the ending date will be Dec. 31, 2016. All other annual reports shall cover the reporting period of Jan. 1 to Dec. 31 each year.

2. Is your MS4 new permitted (i.e., is this your first MS4 permit)?

Yes  No

If yes, you are required to submit the MS4 stormwater management plan report annually. Reports are due Feb. 28 each year. For the first reporting period, the beginning date will be the date of issuance of the permit and the ending date will be Dec. 31, 2016. All other annual reports shall cover the reporting period of Jan. 1 to Dec. 31 each year.

3. Is your MS4 a previously permitted MS4 and not subject to a TMDL?

Yes  No

If yes, you are required to submit the MS4 stormwater management plan report biennially (i.e., once every two years). Reports are due Feb. 28 every odd year. The first report will be due February 2017, and will cover the reporting period from June 13, 2016, to Dec. 31, 2016. All other reports shall cover the reporting period of Jan. 1 of the first year to Dec. 31 of the second year.

4. If you are part of a co-permitted MS4 permit, submit combined MS4 stormwater management plan reports, and one or more of the co-permitted MS4s have annual reporting based on the above criteria, then submit your MS4 stormwater management plan report annually by Feb. 28 of each year.

If you are part of a co-permitted MS4 permit and do not submit combined MS4 stormwater management plan report, then each MS4 co-permittee will submit their MS4 stormwater management plan report based on the above criteria.

5. Reporting Period:

BEGINNING:

ENDING:

### Part C – STORMWATER MANAGEMENT PLAN REPORT PROGRESS AND COMPLIANCE

As an attachment, please provide information for each of the items below. Provide informative data, success stories, and experiences that support the successful implementation of your stormwater management plan report.

1. Describe the status of compliance with permit conditions for the permitted MS4.
2. Provide information regarding the progress toward achieving the statutory goal of reducing the discharge of pollutants to the maximum extent practicable to the MS4.
3. If another governmental entity implements any best management practice or minimum control measure, please provide the following:
  - a. Name of the government entity;
  - b. Name of the primary contact for the government entity;
  - c. Contact information (i.e., address, city, ZIP code, state, and phone number); and
  - d. Specific best management practices or minimum control measures being implemented by the government entity.

It is the responsibility of the permittee to provide all information under this report regardless if best management practices or minimum control measures are being implemented by another governmental entity. If a complete minimum control measure is being implemented by an alternative governmental entity, then only indicate the best management practice under the minimum control measure.

4. Provide a summary of any stormwater activities and known construction activities that will be covered under the authority of the MS4 permit that are scheduled to begin during the next reporting period.
5. Provide a description of any changes to the stormwater management plan report, best management practices, measurable goals, and the iterative process that have occurred during the covered reporting period.
6. Provide a list of best management practices that were evaluated during the covered reporting period, and provide information on how the best management practice was determined effective.
  - a. If any of the best management practices were determined to be ineffective, provide a summary on how the ineffective best management practice was resolved.
7. If any water samples were collected and analyzed during the covered reporting period by the permitted MS4 or on behalf of the permitted MS4, please complete Part D – Water Sample(s) Analysis.

### Part D – WATER SAMPLE(S) ANALYSIS

PARAMETER OR INDICATOR	FREQUENCY	RESULT	DRY WEATHER SAMPLE?	WET WEATHER SAMPLE?
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

1. Are any of the parameters being sampled due to the MS4 being subject to an established or approved Total Maximum Daily Load?

Yes  No

If yes, please indicate the parameter/pollutant.

2. Does the data support water quality attainment or support trend data toward water quality attainment?

Yes  No

If yes, please describe.

**Part E – TOTAL MAXIMUM DAILY LOAD (TMDL) ASSUMPTIONS AND REQUIREMENTS ATTAINMENT PLAN**

1. Is your MS4 subject to an established or approved TMDL? If no, please indicate "No" below and do not complete any other portion of the TMDL Assumptions and Requirements Attainment Plan portion of this report.

Yes  No

2. Has your TMDL Assumptions and Requirements Attainment Plan been completed and submitted? If no, please provide a summary as an attachment on the progress toward submitting and implementing the TMDL Assumptions and Requirements Attainment Plan.

Yes  No

3. Has your TMDL Assumptions and Requirements Attainment Plan received approval from the department? If yes, please provide a summary of the status of the plan and include implementation status of identified best management practices and measurable goals along with any changes to best management practices or measurable goals (if applicable)..

Yes  No

4. Does the TMDL Assumptions and Requirements Attainment Plan incorporate Integrated Planning? If yes, please provide a summary of the status of the Integrated Plan.

Yes  No

**PART F – SUBMIT REPORT TO:**

Missouri Department of Natural Resources  
Water Protection Program  
MS4 Program Coordinator  
P.O. Box 176  
Jefferson City, MO 65102-0176

**PART G - CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE OR PERMITTEE (LEGALLY RESPONSIBLE PERSON)	DATE SIGNED
	2/10/2022
NAME (PRINTED OR TYPED)	TITLE

MO 780-1846 (10-16)

**Attachment to Missouri Department of Natural Resources (MDNR) Form 780-1846 (10-16)**

**for**

**Municipal Separate Storm Sewer System (MS4) Stormwater Management Plan (SWMP) Report**

**for**

**City of Jackson, MO**

**1. Status of Compliance with Permit**

In April 2021, The City of Jackson applied for a MO-R04 (2-step) permit. DNR completed a thorough review of the City's application and associated Stormwater Management Plan (SWMP). The application was denied due to lacking specific detail and not fully addressing permit requirements. DNR provided the City of Jackson with the SWMP evaluation form that included recommendations and required action that must be taken to bring the SWMP into compliance. The City is currently in the process of updating the SWMP and City ordinances to address the items listed in the evaluation. DNR issued the City of Jackson a new Comprehensive Permit, MOR04C013 on October 7<sup>th</sup>, 2021.

**2. Progress to Reduce Discharge of Pollutants.** Progress has been made through each of the individual BMPs. Successes and Failures of these BMPs are listed with section 6.

**3. Alternate Governmental Entity.** The City of Jackson is not part of a joint MS4 permit. The County of Cape Girardeau and the nearby City of Cape Girardeau each have their own MS4 permits. Each have their own resources and their own independent MS4 programs.

**4. Anticipated Stormwater and Construction Activities Covered Under MS4 Permit.** Construction activities that are likely to occur during the 2022 MS4 reporting period are listed below:

- Two new bridges constructed over Hubble Creek
- New commercial and residential developments;
- Street repair by City forces and City contractors; and
- Park and cemetery maintenance activities.

**5. Changes to SWMP.** Changes were made to the SWMP prior to the April 2021 Submittal. As these have already been evaluated by DNR and found insufficient, the following summarizes the anticipated major changes currently ongoing to address the recommendations and required actions.

- MCM 1 – the Target Audiences will be refined to City Residents, Developers and Contractors. Other groups such as children and businesses will be addressed in the other minimum control measures. The measurable goals and iterative process evaluation will be refined to better allow evaluation of its effectiveness.
- MCM 2 – A more detailed process for public inquiries and concerns will be included. These steps were already in place, but were not clearly defined in the SWMP. Documentation of public hearings and their effectiveness will also be included.
- MCM 3 – More detail is being included such as a timeline for the whole process from initial responses to remediation of illicit discharges. Specific methods on testing, development of high priority areas, and a discussion on illegal dumping are other items being added to this MCM.
- MCM 4 – The language concerning “Larger Common Plan of development or sale” is being added. Revisions are being made to the SWMP and City Ordinances to ensure that its clear these regulations apply to redevelopment as well as development. Self-inspections will be required by the City of Jackson. More details on violations and enforcement are being included.
- MCM 5 - The language concerning “Larger Common Plan of development or sale” is being added. The City will be adopting criteria for the calculation of water quality volumes. A process for maintenance agreements and yearly inspections is being developed.

- MCM 6 – A more detailed training program will be developed that will include all City employees based on their position with the City. The measurable goals and iterative process evaluation is being revised. Street sweepings are now being disposed in a certified landfill. This information has been included in the SWMP.

6. **BMPs.** Many of the BMPs listed in the revised SWMP submitted to DNR in April 2021 were global in nature and were not monitored. These will be modified or replaced to BMPs and or measurable goals that can be evaluated. The following are the BMPs that were completed and could be evaluated.

**MCM 1 -**

- Give all applicable contractors educational material on erosion and sediment control with their annual license approval in Q2 of 2021: This was not completed as the City Planning department revised their schedule to have licenses renewed in January of each year. This BMP is being considered for the next cycle of contractor license renewal at the end of 2022.

**MCM 2 -**

- Hold a public notice period and respond to comments received on the SWMP: Response to this BMP was poor to non-existent. This BMP will be revised prior to any future public notices to include additional advertising via email to developers, contractors and engineers as they are a target audience.
- Hold a public hearing regarding the SWMP: This public hearing was held during a regular Mayor and Board of Aldermen meeting that is opening to the public. Attendance was high during this meeting, however most, if not all, those in attendance were there for a different topic related to their specific neighborhood. Similar to the public comment, additional advertising and invitations need to occur.
- The permittee shall have a publicly available method to accept public inquiries or concerns for all MCMs: Complaint/Concerns logged into iWorqs (City's workload database) totaled 13 for 2021. These come into the City via the Public Works phone line, email and a form on the City's website. It is anticipated that these will increase as public outreach expands.

**MCM 3 -**

- There were several Illicit Discharge BMPs that were not started such as dry weather inspections. Reported illicit discharges were tracked via iWorqs and addressed immediately. BMPS and measurable goals will be improved in 2022.

**MCM 4 -**

- Have an ordinance or other mechanism to require construction site operators to implement erosion and sediment control BMPs at construction/land disturbance sites: This BMP appears to be effective in that there were more permits issued and inspections completed in 2021 than any year prior. The ordinance will be improved for more clarification on redevelopment and other types of disturbance other than new development.
- Maintain and apply procedures for review of all pre-construction site plans: This BMP and the changes made in the last two years appear to be effective. Construction plan checklists and records of grading permits issued are more organized and more easily referenced.
- Maintain and apply procedures for site inspection and enforcement of control measures. Inspect (or require the inspection of) any BMP structure and ensure BMPs are implemented and effective: This BMP was effective in 2021 and will continue to improve. Procedures and documentation will still be modified slightly to be more efficient. Enforcement has not been effective. This part of the BMP is being improved in the revised SWMP and will require more consistency by City staff.

**MCM 5 -**

- Several of the BMPs included creation of various ordinances such as 30-ft vegetation setbacks. These BMPs were not assigned measurable goals or means for measuring their effectiveness other than the creation of the ordinance. The ordinances were created.
- BMPs to effectively remove stormwater pollution: The City performs street sweeping throughout the City. It was completed the minimum twice per year.

- Attempt to maintain predevelopment runoff conditions and post-construction runoff from new development and redevelopment: Detention was required for all development greater than 3 acres.
- Maintain a plan to ensure adequate long-term operation and maintenance of structural and non-structural Post-Construction BMPs.: Previously maintenance and inspection relied entirely on the homeowner which has not been effective. The City is working on a process for regular inspections of stormwater quality facilities by City staff and maintenance agreements.
- Inspection plan with implementation schedules: Inspections were previously only done when a complaint was made. The City is working on a process for regular inspections of stormwater quality facilities by City staff and maintenance agreements.

7. **TMDL Streams.** There are no streams in the City of Jackson that are subject to TMDLs.

6.1.1.