STORMWATER MANAGEMENT PLAN

April 2018 – September 2021

Signed: Christina L. Luebbert, P.E., LEED AP
E-2000150050
Luebbert Engineering
304 Travis Court
Jefferson City, MO 65101
573-291-6567
City of Excelsior Springs Background

Information on the Permittee:

Name of the Permittee: City of Excelsior Springs, Missouri
Type of Entity: City - Municipality
Total Area: 10.45 sq. miles
Mailing Address: 103 E. Water Street, Excelsior Springs, MO 64024
Primary Contact: Nate Conyers, Stormwater Coordinator
   Phone Number: 816-630-0755
Secondary Contact: Chad Birdsong, Public Works Director
   Phone Number: 816-630-0755
Population (2016 estimated): 11,522

Information on the Municipal Separate Storm Sewer System:

MS4 System Location: Excelsior Springs, Missouri
Name of Organization: City of Excelsior Springs, Missouri
County Permitee Resides: Clay County and Ray County
The major receiving waters within the permitted area include: Dry Fork, Williams Creek, Gold Mine Creek, Fishing River
   None of the receiving waters are on the latest CWA’s list of impaired waters.

Information on Adjacent Waterways:

The Permittee is within 100 feet of: Streams and lakes
The Permittee is not within 100 feet of waters classified as major reservoirs.
The Permittee has some area defined as wetlands as identified by the National Wetland Inventory.
Stormwater from Excelsior Springs does not discharge to a sinkhole.
Introduction

The City of Excelsior Springs received its first Municipal Separate Storm Sewer Permit in 2007 (MO R-040074). This permit was renewed in 2008 and again April 1, 2017. This Stormwater Management Plan (SWMP) updates the previous SWMP associated with the 2008 permit.

The Director of Public Works is ultimately responsible for implementing the stormwater program. The Stormwater Coordinator is the primary contact and carries out many of the day to day activities associated with the stormwater program including working with a consultant to move priority issues forward. The Assistant Public Works Director also has a role in program implementation. Additional staff have individual responsibilities related to this program as outlined in the list of municipal operations in Section 4.2.6.1.2. To varying extents, nearly all City employees are a part of the stormwater program implementation. At this time, the City’s stormwater program is funded through pollution control funds.

The purpose of this SWMP is to provide information related to the efforts of the City of Excelsior Springs to reduce nonpoint source pollution through public education and participation, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control and good housekeeping in municipal operations. It is the City’s intent to be compliant with the state and federal requirements set forth under NPDES Phase II to the Maximum Extent Practicable. The section numbers within this plan relate directly to the latest permit requirements provided in the General Permit for Small Municipal Separate Storm Systems dated March 1, 2017.

4.2.1 Public Education and Outreach of Stormwater Impacts

4.2.1.1 Program Goal

The City of Excelsior Springs will implement a public education program to distribute educational material to the community and conduct outreach activities about the impact of stormwater discharges on waterbodies and steps the public can take to reduce pollutants in the stormwater runoff.

The Stormwater Coordinator will be the person primarily responsible for this program goal with assistance and coordination with the Public Works Director, the Assistant Public Works Director and the City’s stormwater consultant.

The program goal will be evaluated biennially based on the measurable goals listed below. Changes will be made based on the effectiveness of each Best Management Practice. Additionally, MARC performs a public attitude survey throughout the Kansas City metropolitan area approximately biennially. The City of Excelsior Springs will review the results of these surveys as they provide measurement of increased public knowledge on stormwater quality issues metro-wide.

4.2.1.1.1 Target Audiences

During the initial development of the stormwater education program, Excelsior Springs identified the most common sources of urban stormwater pollutants that would be targeted to
improve overall water quality. The target audiences were selected because changing their behavior would have a significant stormwater quality impact on the target pollutants. Subsequent reviews confirm the initial identification of pollutant sources. The target audiences for the public education program are:

- Citizens (Homeowners)
- Developers and Home Builders
- Business Owners
- Children
- Elected Officials
- City Staff

4.2.1.1.2 Plan to Inform About Steps to Take to Reduce Stormwater Pollution

In order to inform individuals of steps they can take to reduce pollution; the City of Excelsior Springs has selected the following Best Management Practices (BMPs) for implementation as part of their Public Education and Outreach program:

- *Participate in the Mid-America Regional Council’s (MARC) water quality public education programs and integrate them into the City’s local SWMP* - The City of Excelsior Springs will continue the utilization of the MARC water quality public outreach and education programs for implementation as part of this Storm Water Management Program. This BMP will allow the City to continue leveraging their paid membership in MARC to better meet their SWMP goals. The City will continue to integrate the MARC water quality information into the local program by posting information on the City web site, making the various informational materials available at the library, Hall of Waters (City Hall) and distributing additional informational materials as opportunities arise.

In addition to these more local efforts, MARC is continuing to promote public education on steps that can be taken to reduce stormwater pollution through radio PSAs, educational displays at community events, giving away items with a NPS pollution reduction message, hosting workshops and training seminars for businesses and homeowners and providing extensive educational resources via their web site. MARC also performs a water quality attitude survey approximately every other year which provides “measurement” of changes in the metro area. The City of Excelsior Springs will continue to review the results of previous and future surveys to evaluate the progress of this BMP.

- *Household Hazardous Waste program* - The City of Excelsior Springs has selected continuing the household hazardous waste collection program for implementation as part of this Storm Water Management Program. HHW is collected in Excelsior Springs biannually and in other drop-off locations around the Kansas City metro area on a regular basis. Citizens may also make appointments to drop off HHW at other
Kansas City metro area permanent locations and attend other mobile collection events in the metro area.

The measurable goal for implementation of this BMP is to advertise and promote this existing program locally through the web site, press releases, brochures, etc. MARC provides Excelsior Springs with metrics from the biannual event including the number of vehicles that come through, where they are from. This BMP crosses over to the Public Involvement and Illicit Discharge Elimination minimum control measures (MCMs).

- **Dog Waste Disposal Program** - The City of Excelsior Springs has selected using a dog waste disposal program as part of this Storm Water Management Program. Currently, there are multiple dog waste stations with associated educational signage in Excelsior Springs's parks system. The measureable goal for implementation of this BMP will be to ensure the dog waste stations are maintained with sufficient bags being supplied and the disposal bins available and emptied regularly. This BMP crosses over to the Public Involvement and Illicit Discharge Elimination MCMs.

### 4.2.1.1.3 Plan to Inform Individuals and Households About Steps to Become Involved with the SWMP

The City of Excelsior Springs includes information on their web site about a variety of ways that citizens can become involved in the SWMP. This includes the posting of the SWMP to the web site and asking for comment, posting of information about how volunteer groups can do storm drain marking and links to MARC information about education and outreach activities. Refer to Section 4.2.2 for additional information.

### 4.2.1.1.4 Outreach Strategies/Mechanisms

Over the years, the City of Excelsior Springs has refined their outreach strategies and mechanisms. The City will continue to use the following tools to educate the public about steps they can take to prevent stormwater pollution:

- **Social Media** - The City of Excelsior Springs has selected the use of social media such as Facebook as part of their public education and outreach program. The City may also use its Nixel alert system which allows text blasts to citizens who have signed up for the service.

The measurable goal for implementation of this BMP is to include NPS pollution prevention information on social media at least twice a year. The City will track the number of "friends" or "followers" it has on its social media accounts and the number of "likes" or similar feedback as well as any comments received. This information will be included in the biennial report.
The link to the Facebook page is:

https://www.facebook.com/Excelsior-Springs-Stormwater-573594516412626/?eid=ARBHkfVk_zPeRaPVqx9uUrbXExaUmUMiY7BBJ1VRvJ3E906625LmnQUAVlywuMnjGg0zld_TTHVdDebs

- **Public Access Television (Channel 2)** - The City of Excelsior Springs has selected posting information on the public access television station for implementation as part of this Storm Water Management Program. This will allow messages to get out to a wider variety and potentially larger volume of people.

The measurable goal for implementation of this BMP is to post information to the cable channel at least twice a year. Staff may tailor messages to tie into different education and outreach activities.

- **Website** - The City of Excelsior Springs has selected posting information on the City web site as part of their public education and outreach program.

The measurable goal for implementation of this BMP is to continually have a wide variety of stormwater education topics on the web site. As of the date of this SWMP, most of this information can be found here:


- **MARC Brochures** - The City of Excelsior Springs has selected utilization of the MARC water quality brochures as part of their public education and outreach program.

The measurable goal for implementation of this BMP is to continually have a supply of brochures on various topics available at the library and Hall of Waters (City Hall).

- **Press Releases** - The City of Excelsior Springs has selected press releases for implementation as part of this Stormwater Management Program. The City will submit press releases to media outlets semi-annually. These press releases (month/year and subject of article) will be tracked and reported biennially.

- **Public Presentations** - The City of Excelsior Springs has selected public presentations for implementation as part of this Stormwater Management Program. During a previous permit cycle, staff developed a somewhat “canned” presentation for youth audiences that included the use of the “Fred the Fish” Youtube video and a handout with a picture of the Cuyahoga River on fire with the theme “Things YOU can do to keep our waterways clean!” Staff also developed a general message for adult
audiences about the City’s stormwater program and often includes information about how attendees can get involved in the SWMP.

The measureable goal for implementation for this BMP is to present an educational program to at least one school-aged group and one adult audience each year. In the past, these presentations have been coordinated with education and outreach for community involvement activities like storm drain marking and stream cleanups.

- **Direct Mailings to Target Audiences** - The City of Excelsior Springs has selected direct mailing to target audience(s) for implementation as part of this Stormwater Management Program. This will allow the City to target specific actions or behaviors desired from the target audience.

The measureable goal for implementation for this BMP is to send direct mail to a target audience at least once each year.

### 4.2.1.1.5 Target Pollutant Sources

The following is a list of the leading pollutants, that could be found in the permitted area, that are carried by stormwater runoff into water bodies and will be targeted for reduction in the public education and outreach program:

- Suspended solids
- Oil and grease
- Pesticides/Herbicides
- Bacteria/Nutrients/Oxygen-depleting substances
- Habitat alterations
- Salinity (salt)
- Litter/Trash

These pollutants were selected because they are universally accepted as some of the most common to be found within urban stormwater runoff.

### 4.2.2 Public Involvement and Participation

#### 4.2.2.1 Program Goal

The City of Excelsior Springs will implement a public involvement/participation program to provide opportunities for the community to be involved with the development and oversight of the SWMP. The City of Excelsior Springs will comply with state and local public notice requirements when implementing the public involvement/participation program.
The Stormwater Coordinator will be the person primarily responsible for this program goal with assistance and coordination with the Public Works Director, the Assistant Public Works Director and the City’s stormwater consultant.

The program goal will be evaluated biennially based on the measurable goals listed below. Changes will be made based on the effectiveness of each Best Management Practice. Additionally, MARC issues annual reports indicating public involvement activities that were completed each calendar year. These reports are indicative of public involvement in the metro area which includes Excelsior Springs.

4.2.2.1.1 Public Notice on Renewal Application/SWMP

The public was included in reviewing the SWMP. In January, approximately 15 business days prior to the submittal of the SWMP to MDNR, the renewal application and SWMP was made available to the public and information requesting comment posted to social media.

4.2.2.1.2 Public Meeting Notice, If Applicable

The SWMP was presented to the City Council on January 22nd for their review at a regular Council meeting which followed the usual public meeting notice requirements.

4.2.2.1.3 Plan to Target Stakeholders

The City of Excelsior Springs has developed a plan to target stakeholders. The following BMP’s are currently used to invite public involvement and participation in the City’s SWMP.

- *Invite public input through existing meetings* - City of Excelsior Springs invites public input through existing mechanisms as part of this Storm Water Management Program. This BMP allows public involvement and participation to be integrated into existing activities through open public comment at the City Council meetings and discussion of development and redevelopment issues as they relate to stormwater at the Planning and Zoning hearings. The number of inputs received through these mechanisms will be reported biennially.

- *Invite public input through the Web Site* - The City web site has requests information from the public related to spotting of illicit discharges and construction site runoff control issues. A phone number is provided on the web site to call if these issues need to be reported.

The number of inputs received through this mechanism will be reported biennially.


4.2.2.1.4 Stormwater Committee

The City of Excelsior Springs has chosen not to have a Stormwater Advisory Committee. If this changes in the future, citizens will have an opportunity to be representatives on the committee.
4.2.2.1.5 Volunteer Monitoring/Cleanup Activities

The City of Excelsior Springs provides opportunities for the public to become involved in volunteer monitoring and cleanup activities. The following BMP's describe these opportunities:

- **Encourage local public participation in the Mid-America Regional Council’s (MARC) water quality programs** - The City of Excelsior Springs encourages its citizens to participate in the MARC water quality programs as part of this Storm Water Management Program. This BMP allows the City to leverage their paid membership in MARC to better meet their SWMP goals. Information on activities citizens and businesses can participate in through the MARC program will be disseminated through the BMP's described in the Public Education and Outreach section.

  The measurable goal for implementation of this BMP is to have information about participation in MARC sponsored programs available on the web site. Refer to Section 4.2.1.1.2 for additional information.

- **Work with community groups to perform stormwater quality related activities** - The City of Excelsior Springs has selected working with community groups to perform stormwater quality related activities for implementation as part of this Stormwater Management Program. This BMP allows for direct public involvement and participation in program implementation.

  The measurable goal for implementation of this BMP is to do at least one activity each year with volunteers from community groups. The City will look for ways that citizen volunteers can educate others in the course of these activities.

4.2.2.1.6 Volunteer Opportunities to Educate Others

The City of Excelsior Springs provides opportunities for volunteers to become involved educating others about stormwater quality. When citizen groups do storm drain marking, they also hang public education door tags in the area to bring attention to the storm drain markers and discuss why illicit discharges are undesirable. On average, four homes are provided information for every storm drain marked. The City will track the number of volunteers that are involved in distributing the door hangers.

4.2.3 Illicit Discharge Detection and Elimination

4.2.3.1 Program Goal

The City of Excelsior Springs has developed, implemented, and currently enforces a program to detect and eliminate illicit discharges into their Small MS4.

The Stormwater Coordinator will be the person primarily responsible for this program goal with assistance and coordination with the Public Works Director, the Assistant Public Works Director, GIS Coordinator, the City's stormwater consultant, the City inspectors and maintenance staff.
The program goal will be evaluated biennially based on the measurable goals listed below. Changes will be made based on the effectiveness of each Best Management Practice.

4.2.3.1.1 Storm Sewer Map

The City of Excelsior Springs has developed a storm sewer system map that is a reasonably complete inventory of all publicly owned stormwater pipes, structures and the open channels that connect them. Some of the privately owned stormwater system is also mapped, especially in commercial areas. This map is GIS-based and integrates additional GIS data such as aerial photography, contour data, etc. Some of this information was originally collected in about 2006/2007. The GIS data is reviewed and updated as new additions to the MS4 are constructed. Additionally, corrections are made whenever a discrepancy is discovered in the field. The Stormwater Coordinator and the GIS Coordinator are responsible for this task.

Outfalls were identified during a desktop exercise in a previous permit cycle. At the time, it was understood that an outfall was defined as anywhere water left the jurisdictional boundary in a concentrated form with major outfalls being defined as coming from a 36" diameter pipe or larger. Outfall locations were identified based on this definition and prioritized based on the land use in the area upstream of the outfall.

Due to a revision in the interpretation of the definition of an outfall for the MS4, the outfall locations will be revised, and a complete inventory of the outfalls will be created within the GIS. This map will include all of the publicly owned pipe outlets to waters of the United States within the urbanized area. Additional outfalls outside the urbanized area may be included in the mapping if they come from areas within the City limits of higher pollution potential or that happen to be immediately downstream of post-construction stormwater BMPs. This will be completed in the second calendar year of the permit cycle (2019) and the revised outfall map will be added at a link noted below to where the outfall map can be viewed online.

The outfall map can be viewed at the following link:

(Write in link above when task completed)

4.2.3.1.2 IDDE Ordinances

The City of Excelsior Springs passed an update to the stormwater ordinances on April 21, 2014. The Section 407 Article VII of the City Code relates to this minimum control measure. Section 407.350 is related to discharge and connection prohibitions. Section 407.360 is related to the requirements related to the notification of spills. Copies of these codes can be found on the City’s web site and through this municlex link:

https://ecode360.com/29307335
4.2.3.1.3 Plan and Implementation Schedule to Detect Illicit Discharges/Connections

The City of Excelsior Springs has been pursuing the detection of illicit discharges and connections to the MS4 since their first permit in 2007 while iteratively improving this program over time. Initially, this included investigation of cross-connection between the sanitary sewers and the MS4 through the utility department’s CCTV and smoke testing work. Later this began to include the dry weather field screening of selected outfalls. The City will continue to improve their detection of illicit discharges through the BMPs described in the following sections.

4.2.3.1.4 Dry Weather Field Screening

Dry weather field screening is defined as a visual inspection of the location to determine if illicit discharges exist or have occurred in the recent past. If an illicit discharge is present at the time of inspection, the enforcement response plan will be utilized to investigate the source and remove the discharge. If one is not present, the inspector simply documents the condition of the outfall and makes any notes for follow up actions. If an outfall consistently falls in this latter category, the City may choose to discontinue the inspection of this location.

Based on the reinterpretation of the definition mentioned in Section 4.2.3.1.1, the outfalls greater than 36” in diameter will be inspected during 2019. The remainder of the outfalls will be divided by subwatershed areas and approximately half will be inspected in 2020 and half in 2021. This will result in each outfall being inspected approximately once within the permit period. If an outfall is in an area of illicit discharge concern, the inspection may be repeated more frequently.

4.2.3.1.5 Procedures for Locating Priority Areas

The City of Excelsior Springs’s procedures for locating priority areas which include higher likelihood of illicit connections (e.g. areas with older sanitary sewer lines) or sampling to locate impacted reaches will be re-evaluated following the revision to the outfall definition discussed above. Outfall inspections will be prioritized by size of contributing drainage area first and then by subwatershed location second.

Also, as a part of the upcoming inspections during this permit period, staff will evaluate the contributing drainage area as having “high”, “medium” or “low” risk or likelihood of illicit connections/illicit discharges. This assessment would correlate to the possible need for “more frequent”, “same frequency” or “less frequent” inspections. Additionally, any sites where a possible illicit connection or discharge is found will automatically be placed in the “high priority” category. As mentioned in Section 4.2.3.1.4 above, outfalls consistently found with no indication of illicit connection or discharge will be placed in the “low priority” category.

The types of land use within the contributing drainage area may also dictate the prioritization. For example, a drainage area where an automotive repair shop is located might be placed in the “high priority” category.

4.2.3.1.6 Procedures for Tracing the Source of Illicit Discharges/Connections
The City of Excelsior Springs developed written procedures and techniques for detecting the sources of illicit discharges. These can be described in two broad categories: transient discharges and recurring discharges. Transient discharges may be discovered through complaints or by city employees performing other routine duties. Recurring discharges may be located through dry weather field screening, complaints from neighbors or through discovery by city employees performing other routine duties. Additionally, The City of Excelsior Springs will continue to investigate cross-connection of the sanitary and storm sewer systems through CCTV inspection.

The City of Excelsior Springs developed a prioritization for investigation for cross-connections in conjunction with the wastewater program utilizing all the resources available for inspection. Regardless of the method of discovery, the investigation will move forward by tracing the discharge to its point of origin utilizing the GIS map of the stormwater conveyance system. Once the investigator establishes the point of origin, he/she will need to determine if the discharge is an imminent threat to the public’s health, safety and welfare. Imminent threats will need to be contained by the appropriate personnel. Depending on the nature of the pollutant, this may be the Hazmat team from the Fire Department or Public Works staff. This may include emergency removal of access to the MS4.

Once an emergency response has been handled, the investigator will attempt to determine the responsible party. In some cases, such as dumping, a responsible party may not be determined. Public education in the area may be the only available response to these events. When a responsible party can be determined and the party is willing and able to remediate the problem immediately, the only follow up action required will be a reinspection of the outfall after the cleanup. If the responsible party is not willing or able to remediate the problem immediately, the inspector shall issue a notice of violation outlining the required actions, alternatives and consequences of inaction as set forth in the illicit discharge ordinance.

4.2.3.1.7 Procedure for Eliminating Illicit Discharges/Connections

The City of Excelsior Springs developed an enforcement response plan. This plan further outlines the process of investigating and removing illicit discharges. A copy of the enforcement response plan may be found in Appendix A.

4.2.3.1.8 Plan to Ensure Enforcement of IDDE Ordinances

The City of Excelsior Springs developed an enforcement response plan. This plan further outlines the process of investigating and removing illicit discharges. A copy of the enforcement response plan may be found in Appendix A.

4.2.3.1.9 Plan to Inform About IDDE Hazards

The City of Excelsior Springs has developed a public education effort to inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste. (This BMP also addresses the minimum control measure for public education.)
The City of Excelsior Springs acquired public education materials and distributes them to the appropriate target audiences. City employees are given specific instructions on how to report signs of illicit discharge.

Related existing BMPs:

- *Storm drain stenciling program* - The City of Excelsior Springs will continue to work with community groups to stencil existing stormwater inlets with "Dump No Waste, Drains to Stream".

  The measurable goal will be to report on the number of inlets stenciled biennially.

- *Continue Household Hazardous Waste (HHW) Collection Program* - The City of Excelsior Springs will continue to encourage its citizens to participate in the HHW collection program. This program currently allows for local dropoff biannually, but citizens may also drive to other communities within the Kansas City metro area and dropoff at a variety of times. The public education program will further advertise these options for proper disposal of HHW.

  The City of Excelsior Springs will document the collection activities and report biennially as applicable and as referenced in Section 4.2.1.1.2.

4.2.3.1.10 Plan to Address Non-Stormwater Flows Authorized Under 1.2.2.2 if Significant

The City of Excelsior Springs does not currently see the need to address the following non-stormwater flows into their MS4: landscape irrigation, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, flows from street wash water, and flows from emergency firefighting activities. These flows are not considered significant contributors of pollutants to the MS4.

The City of Excelsior Springs does not currently see the need to address incidental non-stormwater flows into their MS4 (such as non-commercial or charity car washes). These flows are not considered significant contributors of pollutants to the MS4.

4.2.4 Construction Site Stormwater Runoff Control

4.2.4.1 Program Goal

The City of Excelsior Springs has developed, implemented, and currently enforces a program to reduce pollutants in any stormwater runoff to their Small MS4 from construction activities that result in land disturbance of greater than or equal to one acre and any smaller land disturbances if part of a greater plan or sale that would exceed the one-acre threshold in aggregate.
The Stormwater Coordinator will be the person primarily responsible for this program goal with assistance and coordination with the Public Works Director, the Assistant Public Works Director, the City’s stormwater consultant, the City inspectors and maintenance staff.

The program goal will be evaluated biennially based on the measurable goals listed below. Changes will be made based on the effectiveness of each Best Management Practice.

4.2.4.1.1 Erosion and Sediment Control Ordinance

The City of Excelsior Springs passed amendments to Section 407, Article V of the City Code on April 21, 2014. This portion of the code outlines construction site runoff control requirements specifically relate to developments and redevelopments that disturb greater than one acre and further included sites disturbing less, but that were part of a greater plan or sale. The code also requires a sketch plot plan (not necessarily prepared by an engineer) for sites less than an acre of disturbance showing flow direction and stormwater BMPs.

A copy of this code can be found here:

https://ecode360.com/29307281

At least once during the permit cycle, the ordinance will be reviewed to determine its effectiveness and if any additional changes are needed. The ordinance will also be reviewed if any changes to the Missouri General Permit are made during the term of the MS4 permit.

4.2.4.1.2 Construction Site Waste Control Ordinance

The City of Excelsior Springs passed amendments to passed amendments to Section 407, Article V of the City Code on April 21, 2014. In this code, Section 407.260 requires a Stormwater Pollution Prevention Plan that in addition to addressing erosion and sediment control, must "...address other wastes such as discarded building materials, concrete truck washout, chemicals, litter, and sanitary waste."

At least once during the permit cycle, the ordinance will be reviewed to determine its effectiveness and if any additional changes are needed. The ordinance will also be reviewed if any changes to the Missouri General Permit are made during the term of the MS4 permit.

The ordinance can be viewed at the following link:

https://ecode360.com/29307310

4.2.4.1.3 Procedures for Pre-Construction Site Plan Review

The City of Excelsior Springs has selected pre-construction plan review for implementation as part of this Storm Water Management Program.

The measurable goal for implementation of construction plan review is to complete the reviews of new and redevelopment projects disturbing more than one acre in a timely manner ensuring that selected BMPs are appropriate for the site. This is an ongoing program. The number of plans reviewed will be documented and reported biennially.
The City's Stormwater Consultant follows established procedures (via checklist) for plan review. At least once during the permit cycle, these procedures will be reviewed to determine if any additional changes are needed.

4.2.4.1.4 Procedures for Receipt and Consideration of Information from Public

The City includes education on construction site runoff control as a component of their general public education program. (This BMP also addresses the minimum control measure for public education.)

The City of Excelsior Springs acquired public education materials and distributes them according to goals set forth in the Public Outreach and Education section. Target audiences will include developers and contractors. Also, City staff receives training in proper inspection techniques for erosion and sediment control. Staff will continue to seek opportunities for education in this area.

City of Excelsior Springs has selected receiving public input for implementation as part of this Storm Water Management Program. This BMP coordinates with MCM #2 and can be integrated into existing activities through receipt of information from the public at the existing Planning and Zoning hearings and City Council meetings. Additional input can be received less formally through the designated phone number.

The measurable goal for implementation of receiving public input on proposed and current construction projects is to log the receipt of this information, respond within 1 business day where applicable and to document any complaint inspection or enforcement actions taken. A summary of the receipt of information from the public will be included in the biennial report.

4.2.4.1.5 Procedures for Inspections and Monitoring of Construction Sites

The City of Excelsior Springs has selected construction site inspections for implementation as part of this Storm Water Management Program.

The measurable goal for implementation of construction site inspections is for new and re-development projects disturbing more than one acre to be inspected at least monthly ensuring that selected BMPs are installed and functioning at the site. This is an ongoing program. The number of inspections completed will be documented and reported biennially.

The City inspector follows established procedures (via checklist) for site inspections. The checklist form can be viewed in Appendix B.

4.2.4.1.6 Plan to Ensure Compliance

Section 407, Article IX of the City Code has enforcement procedures including escalation of enforcement based on the number and types of violations. This code can be viewed at the following link:

https://ecode360.com/29307397
At least once during the permit cycle, the ordinance will be reviewed to determine their effectiveness and if any additional changes are needed. They will also be reviewed if any changes to the Missouri General Permit are made during the term of the MS4 permit.

4.2.5 Post-Construction Stormwater Management in New Development and Redevelopment

4.2.5.1 Program Goal

The City of Excelsior Springs has developed, implemented, and currently enforces a program to address the long-term stormwater runoff new and redevelopment projects that result in land disturbance of greater than or equal to one acre and any smaller land disturbances if part of a greater plan or sale that would exceed the one-acre threshold in aggregate. This program has been designed and is working to prevent/minimize water quality impacts of these projects.

The Stormwater Coordinator will be the person primarily responsible for this program goal with assistance and coordination with the Public Works Director, the Assistant Public Works Director, the City’s stormwater consultant, the City inspectors and maintenance staff.

The program goal will be evaluated biennially based on the measurable goals listed below. Changes will be made based on the effectiveness of each Best Management Practice.

4.2.5.1.1 Ordinances

The City of Excelsior Springs has worked over the years to develop a variety of regulatory mechanisms and design standards that promote responsible development within their jurisdiction that works to protect the public and the environment from the effects of flooding and stormwater pollution. These ordinances are discussed below:

• Detention/Treatment Requirements

The City of Excelsior Springs passed an update to the stormwater ordinances on April 21, 2014. Chapter 407, Article IV, outlines the requirements for design standards related to stormwater management. The section highlights the requirements for on-site detention/retention and treatment through the development of a post construction management plan. In addition, Section 407.150(C) requires adherence to the design standards set forth in KC APWA Section 5600 and the MARC BMP Manual.

Chapter 407, Article IV: https://ecode360.com/29307210

KC APWA 5600:
http://kcmetro.apwa.net/Content/Chapters/kcmetro.apwa.net/Specifications%2FAPWA%205600_16FEB2011%20minor%20correction%20pg%2067.pdf

MARC BMP Manual:
Stream Buffer Requirements

The City of Excelsior Springs passed an update to the stormwater ordinances on April 21, 2014. The revisions highlighted the use of stream buffers as a filtration, infiltration and stabilization Best Management Practice (BMP). The applicable part of the code can be found at the following link:

https://ecode360.com/29307227

Wetland Protection

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

The site plan requirements set forth in the APWA 5600 plan requirements standards requires the identification of wetlands on any proposed development plans.

Section 5609.7 (must show man-made and natural topographical features which would include wetlands):
http://kcmetro.apwa.net/Content/Chapters/kcmetro.apwa.net/File/Specifications%2FAPWA%205600_16FEB2011%20minor%20correction%20pg%2067.pdf

4.2.5.1.2 Long Term Operation and Maintenance Requirements

The City of Excelsior Springs passed an update to the stormwater ordinances on April 21, 2014. Chapter 407, Article VI includes specific requirements for owners of BMP’s related to ongoing operation and maintenance. An enforcement response plan is also outlined in Section 407.310.

https://ecode360.com/29307317

Additionally, the City requires the owner of any development that utilizes structural Best Management Practices to execute a “Covenant to Maintain Stormwater Management Systems”. This document is recorded at the Ray or Clay County Courthouse (based on location of the development) and runs with the land. It outlines the inspection and maintenance responsibilities of the owner and outlines the consequences of failing to maintain the stormwater management systems. The template for this covenant can be viewed in Appendix C.

The City has developed tools to identify all of the long-term stormwater BMPs and their associated maintenance requirements. These are referenced in the annual inspections (see Section 4.2.5.1.4/4.2.5.1.5).

4.2.5.1.3 Strategies to Minimize Water Quality Impacts

The City of Excelsior Springs has adopted the MARC BMP Manual and required adherence to the manual for both development and redevelopment projects, when applicable. The manual uses a level of service methodology to determine a combination of detention and water quality treatment to reasonably mimic pre-construction runoff conditions. When design professionals
working in the area know that they must meet the BMP Manual requirements, they quickly learn to assess site characteristics at the beginning of the design phase and utilize BMPs that protect sensitive areas, minimize the creation of stormwater pollution and effectively remove stormwater pollution.

4.2.5.1.4/4.2.5.1.5 Inspection Plan

The City of Excelsior Springs has developed a written policy and procedure for the inspection of post-construction best management practices. This document can be viewed in Appendix D.

Generally, it requires annual inspections of the BMPs. All inspections are documented on a written form with sufficient photographs attached. The document outlines what the inspector looks for based on the type of BMP being inspected. A summary of these inspections will be included in the biennial report.

4.2.6 Pollution Prevention/Good Housekeeping in Municipal Operations

4.2.6.1 Program Goal

The City of Excelsior Springs has developed and continues to work to 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 Stormwater Coordinator will be the person primarily responsible for this program goal with assistance and coordination with the Public Works Director, the Assistant Public Works Director, the City’s stormwater consultant, the City inspectors and maintenance staff.

The program goal will be evaluated biennially based on the measurable goals listed below. Changes will be made based on the effectiveness of each Best Management Practice.

4.2.6.1.1 Employee Training

The City of Excelsior Springs has a policy and procedure for employee training. A copy of this document can be viewed in Appendix E.

It outlines how employees will receive initial training, ongoing public education, training related to specific standard operating procedures, and training on specialized tasks (such as inspection and enforcement for selected staff). Additionally, the training program will be reviewed biennially.

The biennial report will contain a summary of training received by City employees each year.

4.2.6.1.2 List of Municipal Operations and Municipal Industrial Facilities

The City has created a list of municipal operations that are relevant to the MS4 program that also provides details as to how each operation is relevant to water quality protection from nonpoint source pollution. This list includes: street, sidewalk and parking lot operation and maintenance (including maintenance yards and salt/sand storage); storm sewer operation and maintenance; wastewater treatment; wastewater collection system operation and maintenance; potable water treatment; potable water distribution system operation and maintenance; parks/golf course
operation and maintenance; maintenance of city buildings/community center and other facilities; fire department field operations; police department field operations; airport operations; and all city vehicle and equipment maintenance. This document can be viewed in Appendix F.

The Excelsior Springs has a wastewater treatment facility that operate under Permit Number #MO-0028843. The permit authorizes the discharge of wastewater effluent and stormwater runoff from this facility. Therefore, the requirements of these permits shall be followed above and beyond anything otherwise addressed within this SWMP.

4.2.6.1.3 Maintenance BMPs, Schedules, and MS4 Inspection Procedures

The City of Excelsior Springs has developed numerous Standard Operating Procedures the address inspection and maintenance of the MS4. The SOPs can be found in the Stormwater Coordinator’s office (both hard and electronic copies). The SOPs are also included in Appendix G. All SOPs are reviewed annually at an employee safety meeting. These SOPs include:

- Catch Basin/Storm Drain System/Outfall Repair SOP
- Catch Basin/Inlet Cleaning SOP
- Vactor Truck Waste Handling/Storage SOP
- Erosion and Sediment Control SOP
- Illicit Discharge Detection and Elimination SOP

Metrics related to these municipal operations will be tracked and reported on biennially. Catch basin/inlet inspections and cleaning will be tracked by the number of inlets inspected and reported for cleaning each year.

4.2.6.1.4 Controls for Reducing and Eliminating Pollutants

The City of Excelsior Springs has developed numerous Standard Operating Procedures the address reducing and/or eliminating potential pollutants from the MS4. The SOPs can be found in the Stormwater Coordinator’s office (both hard and electronic copies). The SOPs are also included in Appendix G. All SOPs are reviewed annually at an employee safety meeting. For each of the subcategories listed below, the applicable SOP is listed:

- **Streets, Roads, Highways and Parking Lots:**
  - Street Sweeping SOP
  - Salt/Sand Storage and Application SOP

  Metrics related to these municipal operations will be tracked and reported on biennially. Street sweeping will be tracked by the number of lane miles swept each year.

- **Maintenance and Storage Yards/Shops:**
  - Good Housekeeping (General SOP)
  - Building Maintenance SOP
  - Vehicle/Equipment Storage SOP
  - Vehicle/Equipment Washing SOP
Salt/Sand Storage and Application SOP  
Weed and Pest Control SOP  
Mowing and Irrigation SOP  

The following facilities are inspected annually for pollution control issues:

- Public Works Maintenance – 1290 S. Marietta Street  
- Parks Maintenance - 1301 S. Marietta Street  
- Golf Course – 1201 E. Golf Hill Drive  
- Airport – 1203 E. Golf Hill Drive  
- Community Center – 103 E. Water Street  
- Hall of Waters (City Hall) – 201 E. Broadway Street  

Inspections and activities related to the control of pollutants from City-owned maintenance facilities will be reported on biennially.

The City WWTFs operate under their own NPDES permits and will follow the inspection requirements set forth in those permits.

4.2.6.1.5 Procedures for Proper Waste Disposal

The City of Excelsior Springs has established Standard Operating Procedures (SOPs) related to the proper disposal of waste removed from the MS4. These procedures are covered in the Garbage Handling/Storage and Vactor Truck Waste Handling/Storage SOPs.

4.2.6.1.6 Procedures for Assessing Impacts of Flood Control Projects

The City of Excelsior Springs has a procedure to ensure new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices. New flood management projects completed by private developers must follow the MARC BMP Manual which requires the treatment of the water quality storm (aka “first flush”). The Public Works Director, in cooperation with the City’s Stormwater Consultant, will determine whether or not the development plans submitted accomplish this goal. The City of Excelsior Springs rarely completes new flood management projects. However, in the event that one is scheduled on the capital projects list, the Public Works Director will review the plans with the engineer of record to determine if the water quality storm has been effectively treated.

The City has developed a list of existing flood control projects. At this time, all of these projects are privately owned and there is no enforcement mechanism to require retrofitting unless a redevelopment occurs in the contributing watershed. However, when such a redevelopment occurs, treatment of the water quality storm will be required.

4.2.6.2 Paints, Solvents, Petroleum Products SPCC

The City of Excelsior Springs has established Standard Operating Procedures (SOPs) related to the management of paints, solvents and petroleum products (including waste products). The
SOPs can be found in the Stormwater Coordinator’s office (both hard and electronic copies). The SOPs are also included in Appendix G. These SOPs include:

- Painting SOP
- Parts Cleaning and Storage SOP
- Petroleum and Chemical Handling, Storage and Disposal SOP
- Spill Prevention and Control SOP
- Fueling SOP

There is currently a dual wall 3000 gallon above ground tank with gasoline at the airport. There are currently two 500-gallon tanks at the golf course (one diesel and one gasoline) and one 1000-gallon tank (gasoline). These are in a concrete containment trough. Public Works has a 12,000-gallon dual walled fiberglass underground storage tank of gasoline and 12,000-gallon dual walled fiberglass underground storage tank of diesel. Both have level monitoring systems.

### 5.1 Monitoring

The City of Excelsior Springs will retain all records of any monitoring information for a period of at least three (3) years from the date of the sample, measurement or analysis. Any monitoring conducted for the purpose of implementation of any part of the SWMP will be conducted in accordance to test procedures approved under 40 CFR Part 136.

### 5.2 Recordkeeping

The City of Excelsior Springs will retain records of all activities requiring recordkeeping by the SWMP, a copy of the NPDES permit, a copy of all ordinances, policies and formal procedures for all six (6) minimum control measures and of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the report or application. The City will retain a copy of the most recent SWMP on their website (accessible to MDNR and the public).

### 5.3 Reporting

The City of Excelsior Springs will submit biennial reports to MDNR containing: information regarding progress toward achieving the statutory goal of reducing the discharge of pollutants to the Maximum Extent Practicable (MEP), the status of compliance with permit conditions, the assessment of the appropriateness of the identified BMPs and corresponding measurable goals for each MCM, and a summary of results of information collected and analyzed during the reporting periods including any monitoring data or quantifiable values per the measurable goals. The report will also include a summary of the stormwater activities the City plans to undertake during the next reporting cycle with an implementation schedule. The report will document any
proposed changes to the SWMP including any changes to any identified BMPs or measurable goals that apply to the SWMP.

These biennial reports are due to MDNR by February 28th of odd years based on a reporting period of January 1st of the beginning year to December 31st of the immediate following year. For example, activities completed and data collected between 1/1/17-12/31/18 will be reported on by 2/28/19.

A spreadsheet that serves as a summary of activities to be completed during this permit cycle is included in Appendix II.
APPENDICES

Appendix A – Illicit Discharge Detection and Enforcement Response Plan

Appendix B – Land Disturbance Inspection Checklist for Construction Sites

Appendix C – Post-Construction BMP Maintenance Agreement/Covenant Template

Appendix D – Post-Construction BMP Inspection Policy and Procedure

Appendix E – Employee Training Policy and Procedure

Appendix F – Municipal Operations List

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

Appendix H – Spreadsheet Summary of Permit Activities
Appendix A – Illicit Discharge Detection and Enforcement Response Plan
Illicit Discharge Detection and Enforcement Response (Elimination) Plan

Introduction

The purpose of this plan is to provide guidance to the City of Excelsior Springs staff responsible for the implementation of the requirements of the small municipal separate storm sewer system (MS4) general permit specifically as these requirements relate to illicit discharge detection and elimination (IDDE). This permit, initially issued in August 2007 and renewed in June 2008, requires the City of Excelsior Springs to:

- Maintain a storm sewer system map with all outfalls identified
- Adopt and enforce an ordinance to effectively prohibit non-stormwater discharges to the MS4
- Create a plan to detect and eliminate non-stormwater discharges
- Identify priority areas of their community for IDDE
- Develop procedures for tracing non-stormwater discharges
- Create procedures for removing non-stormwater discharges
- Provide sufficient penalties for effective enforcement
- Inform public employees, businesses and general public about IDDE
- Develop procedures for program evaluation
- Identify exempt discharges, and

The permit also suggests that commercial businesses and industries by inventoried and inspected for their potential for non-stormwater discharges.

For the purposes of this document, the following definitions shall apply:

- **Illicit Discharge** is any direct or indirect non-stormwater discharge to the storm drain system, except as exempted by the City.

- **Illicit Connection** is any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-stormwater discharge including sewage, process wastewater, and waste water to enter the storm drain system and any connections to the storm drain 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 any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

- **Municipal separate storm sewer system (MS4)** is inlets, pipes and open channels that convey stormwater runoff that are within the current corporate limits of the City of Excelsior Springs.
• **Stormwater** is water resulting from precipitation which is not absorbed by the soil, evaporated into the atmosphere, or entrapped by ground surface depressions and vegetation, and which flows over the surface.

• **Exempt Non-stormwater Discharges** are water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wet-land flows, swimming pools (if dechlorinated - typically less than one PPM chlorine), fire fighting activities, and any other water source not containing pollutants.

Also exempt are discharges specified in writing by the authorized enforcement agency as being necessary to protect public health and safety. Additionally, dye testing is an allowable discharge, but requires a verbal notification to the authorized enforcement agency prior to the time of the test. Also exempt are any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, 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 drain system.

Illicit discharges can have different characteristics based on the frequency of the flow, the type of flow, the mode of entry into the MS4, and the nature of the generating site. Discharges that are continuous are easier to detect, while intermittent discharges are harder to detect. Likewise, transitory discharges are usually in response to a singular event such as a spill or dumping episode and are also difficult to detect with routine screening. Transitory discharges are most likely to be found through public and employee notification.

Dry weather discharges can be composed of one or more possible flow types including sewage, washwater, liquid waste (such as oil and paint), tap water, landscaping irrigation, groundwater and spring water. Water quality testing can distinguish illicit flow types (sewage/septage, washwater and liquid wastes) from cleaner discharges (tap water, landscape irrigation and ground water).

Illicit discharges can be further classified based on how they enter the MS4. The mode of entry can either be direct or indirect. Direct entry means that the discharge is directly connected to the storm drain pipe through a sewage pipe, shop drain, or other kind of pipe. Indirect entry means that flows generated outside the storm drain system enter through storm drain inlets or by infiltrating through the joints of the pipe.

Many indirect discharges can be identified and prevented using the concept of “generating sites,” which are sites where common operations can generate indirect discharges in a community.
Sites can generally be classified based on land use. Examples of the most common types of non-stormwater discharge sources categorized by “generating site” type are:

- Residential: failing on-site sewage treatment systems, oil dumping, irrigation overflows, swimming pool discharges and car washing
- Institutional (ie. Hospitals, schools, large corporate campuses): fleet maintenance, parking lot cleaning, loading/unloading areas, outdoor storage areas, and routine grounds maintenance
- Commercial: outdoor washing, disposal of food wastes, car fueling/repair/washing, parking lot power washing, poor dumpster management, sewage from campgrounds and marinas
- Industrial: disposal of rinse water, process water, wash water and contaminated, non-contact cooling water, spills and leaks, ruptured pipes, leaking tanks
- Municipal: operations that handle solid waste, water, wastewater, street and storm drain maintenance, fleet washing, yard waste disposal, spills, accidents, and dumping

**Detection**

Detection of illicit discharges and connections within the City of Excelsior Springs will be accomplished through three main avenues: notification by the public, notification by employees and discovery through routine dry weather field screening. Each of these methods of detection is further described below.

*Discovery Through Public Notification*

The City’s stormwater management program includes extensive public education efforts both within the City and regionally through its cooperation with the Mid-America Regional Council (MARC)’s water quality program. Many city storm inlets and catch basins are marked with “No Dumping” decals that also provide a phone number to report illegal dumping into the storm drainage system. The City web site has instructions on how to report illicit discharges to the MS4. As the public becomes more informed about illicit discharges, the City expects to receive more notifications.

If a citizen calls the phone number provided on the web site, they will reach the Engineering Division. The person receiving the call will record on an illicit discharge investigation form (Appendix F):

- The time and date of the call
- The name and contact information of the caller unless they choose to be anonymous
- The location and nature of the discharge
- The source of the discharge (if the caller knows)
- Any other pertinent information
If the discharge poses an imminent threat the environment or public safety, this person will notify Emergency Dispatch at 816-630-2000 for contacting the police and fire departments, and Stormwater Coordinator at 816-401-3211 at the public works department to deploy containment as soon as possible. This person will also notify the Public Works Director for follow up investigation and enforcement after the incident.

*Discovery Through Employee Notification*

The City’s stormwater management program includes extensive employee education efforts. Standard Operating Procedures provide guidance for reducing the likelihood of illicit discharges from municipal operations. The SOPs address all activities where illicit discharges could occur due to spills, accidents or mishandling of materials.

The City’s employees often have the opportunity to find evidence of illicit discharges and connections as they perform their routine duties. All employees should immediately take steps to stop and/or contain any illicit discharge and notify the Stormwater Coordinator. If the Stormwater Coordinator cannot be reached, notify the Public Works Director. An illicit discharge detection and elimination SOP includes the following procedure for the Stormwater Coordinator to follow when this occurs:

**Procedures to follow if illicit discharge is detected:**

- When the Stormwater Coordinator or Public Works Director receives a call from City staff, they will record on an illicit discharge investigation form (Appendix F):
  - The time and date of the call
  - The name and contact information of the caller (unless anonymous)
  - The location and nature of the discharge
  - The source of the discharge (if the caller knows)
  - Any other pertinent information

- Trace upstream to locate the source.

- **Tracing Procedures**
  - *Flowing discharges* – use visual tracing and/or dye testing.
  - *Non-flowing discharges* – inspect storm drain access points for staining/residual evidence and/or use dye testing.

- Take photos.

- Estimate flow/collect samples if instructed to do so.

- Complete IDDE Investigation Form to document observations.

- Document any further action taken.
If the discharge poses an imminent threat to the environment or public safety, the Stormwater Coordinator will notify Emergency Dispatch at 816-630-2000 for contacting the police and fire departments, and Stormwater Coordinator at 816-401-3211 at the public works department to deploy containment as soon as possible. The Stormwater Coordinator will also notify the Public Works Director for any assistance needed with the follow up investigation and ordinance enforcement after the incident. If the discharge is not of an emergent nature, the Stormwater Coordinator will document the investigation of the discharge.

*Discovery through routine dry weather field screening*

Ideally, a dry weather field screening program would review every outfall from the MS4 to determine if there was evidence of any illicit discharges or connections. However, this is not feasible for the City of Excelsior Springs given the limited staff available. Therefore, staff narrowed down the outfall screening locations by reviewing the watershed areas and potential discharge sources to each of the major outfalls listed in their MS4 permit. The location of the enclosed system above the major outfall locations was reviewed for land use, size of the system and accessibility. In some cases, where large watersheds feed the outfalls, subwatersheds were reviewed and multiple screening locations were selected based on the same parameters.

Primarily, staff chose to limit the size of the outfalls to be screened to 30” or larger. Areas with large amounts of commercial and industrial areas as well as dense residential land uses were also targeted. Because agricultural operations are exempted by NPDES Phase II, outfalls serving mostly agricultural areas were not considered for the dry weather field screening program.

As time and staff resources permit, each of these screening locations have been or will be inspected at least once per permit cycle. At each of these locations, visual inspections will be completed utilizing the dry weather field screening form (Appendix A). Photographs will also be taken. The forms and photographs will be stored in hard copy and electronic form in the Stormwater Coordinator’s office (and within Permitrack). In the event that signs of illicit discharges or connections are found, the inspector will take a sample with field parameters collected as necessary (temperature, pH, color, odor, clarity). The inspector will then proceed with investigation.

**Investigation**

**Legal authority**

As adopted in May 2008, Section 407.060 of the Municipal Code of the City of Excelsior Springs states:

“The City shall be permitted to enter and inspect facilities subject to regulation under this Chapter as often as may be necessary to determine compliance with this Chapter. 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
If the City has been refused access to any part of the premises from which stormwater is discharged, and is able to demonstrate probable cause to believe that there may be a violation of this Chapter, 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 Chapter or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the City may seek issuance of a search warrant from any court of competent jurisdiction."

A copy of this code can be found: https://ecode360.com/29307335

Investigation Procedure

Upon being notified through one of the detection processes above, potential illicit discharges and connections will be investigated by the Public Works Director or his designee. The investigator will begin at location reported and trace the discharge through the storm sewer system upstream to its source unless the location is the source (ie. dumping in an inlet). If needed, the investigator will also trace the evidence of the illicit discharge downstream until it is no longer visible to determine the severity of the damage from the discharge. The investigator will utilize the City’s GIS map of the storm sewer system to identify the affected portions of the MS4. If necessary, the investigator may utilize closed circuit television inspection equipment (like that used for sanitary sewer inspections) to trace the source of the discharge.

The investigator will fill out an illicit discharge reporting form (Appendix E) and collect photographic evidence. Samples may also be collected. A chain of custody form (Appendix B) will accompany any samples taken as part of an investigation.

If the perpetrator of the discharge is obvious (as in illicit connection can be traced to a structure or dumping of construction waste near a construction site), the investigator will refer the violator to the Public Works Director to proceed with enforcement actions as necessary. If the perpetrator cannot be determined, the investigator will notify the Public Works Director to issue a work order to the Street Foreman to contain and clean up the illicit discharge (particularly in the case of dumping).

Elimination

Legal Authority

The City of Excelsior Springs has ordinances to prohibit illicit discharges and connections. Specifically Section 407.170 (see Appendix E) describes the prohibition of any discharge to the MS4 or any watercourse of anything other than stormwater. It does exempt the following discharges: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wet-land flows, swimming pools
(if dechlorinated - typically less than one PPM chlorine), fire fighting activities, and any other water source not containing pollutants.

It also exempts discharges specified in writing by the authorized enforcement agency as being necessary to protect public health and safety as well as dye testing. The discharge prohibition also does not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, 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 drain system.

Section 407.170(B) also prohibits the construction, use, maintenance or continued existence of illicit connections to the storm drain system which expressly includes, without limitation, 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.

Section 407.180 of the City Code requires the notification of the City 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 drain system, or water of the U.S. 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 non-hazardous materials, said person shall notify the authorized enforcement agency 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 three (3) business days of the 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 three (3) years.

**Emergencies**

An emergency illicit discharge can be defined as one that poses an immediate threat to human health and safety or imminent harm to the environment. Primarily these will be spills or accidents where the release of a liquid that must be contained. Depending on the volume and nature of the spilled liquid, the actions that must be taken by the City of Excelsior Springs Fire Department and Public Works Department will vary.

The fire department will be responsible for the containment of any hazardous materials per their General Operating Guideline for Hazardous Material Operations (see Appendix C). Hazardous materials are defined as are solids, liquids, or gases that can harm people, other living organisms, property, or the environment. This would include dangerous goods include materials that are radioactive, flammable, explosive, corrosive, oxidizing, asphyxiating, biohazardous, toxic, pathogenic, or allergenic. Also included are physical conditions such as compressed gases and
liquids or hot materials, including all goods containing such materials or chemicals, or may have other characteristics that render them hazardous in specific circumstances.

Spills of less than 55 gallons of materials that are not hazardous to humans can either be contained by Fire Department or Public Works personnel. Absorbent booms can be deployed to prevent the discharge of the spilled material to the storm sewer. Spills of larger quantities will be contained by the Fire Department with assistance from the Public Works Department.

As soon as the spill or accident has been contained, the Public Works Director or his designee will document the circumstances surrounding the event. He will then notify the responsible party (if identifiable) of their responsibilities related to the cleanup including any required notification of the Missouri Department of Natural Resources (MDNR).

If the responsible party is not readily identifiable, the Public Works Director will make arrangements with a cleanup contractor (Safety Kleen or similar) for a safe cleanup of the illicit discharge. The Public Works Director will retain the documentation of cleanup costs in the event a responsible party can be determined at a later date. If required, the Public Works Director will also notify the MDNR.

Non-emergencies

Illicit discharges that do not constitute emergencies primarily relate to accidents or spills that have been contained or intermittent discharges that are not currently discharging. Intermittent discharges can usually be traced to their source.

Transitory discharges (ie. dumping) may present difficulties in identifying the responsible party. If the responsible party is not readily identifiable, the Public Works Director will make arrangements with a cleanup contractor (Safety Kleen or similar) for a safe cleanup of the illicit discharge. The Public Works Director will retain the documentation of cleanup costs in the event a responsible party can be determined at a later date. If required, the Public Works Director will also notify the MDNR.

Disconnection from system

Illicit connections are usually found when a continuous discharge is located through tracing up through the system via visual inspection or through the use of Closed Circuit Television (CCTV) equipment. The connection can usually be traced to its source. Verification of the source/connection relationship can be further accomplished through dye testing if necessary. The owner of the property from which the discharge is emanating is considered to be the responsible party.

The inspector will document any procedures utilized for tracing the discharge to its source including CCTV footage, photographs and narrative discussion of the tracing process. This
information will be submitted to the Public Works Director and retained in the event that it is later needed for a court proceeding. Any samples taken will have a chain of custody form.

The Public Works Director will then notify the responsible party in writing. The letter shall set forth a timeline for the removal of the illicit connection. A copy of a sample notification letter is included in Appendix D.

In the event that the responsible party is unable to comply within the timeframe presented, the Public Works Director has the authority to allow for an extension of up to 90 days. If the responsible party refuses to comply, the Public Works Director will declare the illicit connection a nuisance and follow the abatement procedure for nuisances set forth in section 710-220 of the Municipal Code (Appendix E).

Follow-up Procedures

The Public Works Director or his designee will annually review the files related to IDDE to determine that all investigations have been properly closed. This will include ensuring that all documentation from the time of notification through the investigation and including the completion of any connection removal and/or clean-up is assembled. Any open investigations will be reviewed to determine if additional enforcement actions is necessary.

Appendices

Appendix A – Dry Weather Field Screening Investigation Form

Appendix B – Chain of Custody Forms (Keystone Laboratories)

Appendix C - General Operating Guideline for Hazardous Material Operations (Fire Dept)

Appendix D – Sample Notification Letter

Appendix E – Illicit Discharge Reporting Form
DRY WEATHER FIELD SCREENING DATA FORM
City of Excelsior Springs, MO

Date: ___________________________ Time: ___________________________

Outfall ID: ___________________________ Land Use: ___________________________

Site Location: ____________________________________________________________

Outfall Dimension/Type: __________________________________________________

Receiving Water: __________________________________________________________

Site Notes: _______________________________________________________________

Time Since Last Rainfall  (> 72 hours)  (< 72 hours)

Amount of Last Rainfall  (> 0.1")  (< 0.1")

Air Temperature: _________________________________________________________

Investigation Type: (In Response to Complaint ___) (Routine Screening ___)

Flow Observed: (YES___) (NO___) If yes, describe amount related to channel or pipe:

  Width of Water Surface: ________________________________

  Depth of Water: ________________________________

  Approximate Velocity: ________________________________

Visual Observations:

  Odor: (None___) (Musty___) (Sewage___) (Rotten Eggs___) (Other_______)

  Color: (None___) (Green___) (Red___) (Brown___) (Gray___) (Other_______)

  Clarity: (Clear____) (Cloudy___) (Opaque___) (Susp. Solids___) (Other_______)

  Floatables: (None___) (Oil Sheen___) (Suds___) (Algae___)

    (Sewage___) (Garbage___) (Other_______)

  Deposits/Stains: (None___) (Sediment___) (Oily___) (Rust___) (Other_______)

  Vegetation: (None___) (Normal___) (Excessive Growth___)

    (Inhibited Growth___) (Other_______)

  Structural Condition: (Normal___) (Cracks___) (Corrosion___) (Other_______)

  Photos Taken: _________________________________________________________
Chemical Parameters:

Temperature: ________________
pH: ________________
Conductivity: ________________
Detergent: ________________
Ammonia: ________________
Turbidity: ________________

Samples Taken? (If Yes, Record Chain of Custody)  (Yes____) (No____)

Comments: __________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________
____________________________________________________

Inspection Completed By: __________________________________
## Contact and Client Tracking Information

<table>
<thead>
<tr>
<th>Name:</th>
<th>Company:</th>
<th>Email:</th>
<th>Tel.:</th>
<th>Invoice address:</th>
<th>Client PO#:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Keystone Labs Job #:</th>
<th>Sampling Handling Assay (CF-2002B):</th>
<th>Invoice #:</th>
<th>Quote #:</th>
</tr>
</thead>
</table>

### Sample and Data Handling

<table>
<thead>
<tr>
<th>QA Level:</th>
<th>Standard</th>
<th>GMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority:</td>
<td>Standard</td>
<td>Rush</td>
</tr>
<tr>
<td>Disposal:</td>
<td>Returned</td>
<td>Destroyed</td>
</tr>
</tbody>
</table>

### Sample Name, Lot # and Specification

<table>
<thead>
<tr>
<th>Storage</th>
<th>Test Required</th>
<th>Keystone use only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room Temp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-8 °C</td>
<td>Endotoxin</td>
<td>KIS</td>
</tr>
<tr>
<td>20-25 °C</td>
<td>Sterility</td>
<td>Assay #</td>
</tr>
<tr>
<td>-80 °C</td>
<td>Total Yeast and Mold</td>
<td></td>
</tr>
<tr>
<td>Total Aerobic Count</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C ontot</td>
<td>Presence/Absence</td>
<td></td>
</tr>
<tr>
<td>Ancillary</td>
<td>Presence/Absence</td>
<td></td>
</tr>
<tr>
<td>Analytical</td>
<td>Presence/Absence</td>
<td></td>
</tr>
</tbody>
</table>

### Additional Information:

<table>
<thead>
<tr>
<th>Sample Disposal:</th>
<th>Disposed</th>
<th>Sent back to client</th>
<th>Initial:</th>
<th>Date:</th>
</tr>
</thead>
</table>

Analysis requested by: ___________________________ Date: __________

Samples received by: ___________________________ Date: __________

Job closed by: ___________________________ Date: __________
Excelsior Springs Fire Department  
Standard Operating Guidelines &  
Administrative Procedures

<table>
<thead>
<tr>
<th>SECTION:</th>
<th>Special Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBSECTION:</td>
<td>Hazardous Material Emergencies</td>
</tr>
<tr>
<td>POLICY#:</td>
<td>504-3</td>
</tr>
<tr>
<td>EFFECTIVE DATE:</td>
<td>09/15/2014</td>
</tr>
<tr>
<td>SUPERCEDES:</td>
<td>204-1 Hazardous Materials; dated November 1, 2013</td>
</tr>
<tr>
<td>APPROVED:</td>
<td>Paul V. Tribble, Fire Chief</td>
</tr>
</tbody>
</table>

**Purpose**

To establish guidelines in regards to the Fire Department’s response of Hazardous Materials incidents.

**Scope**

The scope is to provide employees a standard to follow while responding and operating at Hazardous Materials incidents. It will detail the standard response assignments for a Haz-Mat incident, procedures to be followed regarding recognition, notification, and abatement of the exposed material.

**General**

1. **Level of Response**
   a. All initial responses shall be considered to be at the (HAZARDOUS MATERIALS OPERATIONS) level.
      i. This allows the Incident Commander and those operating at the scene to function in an OFFENSIVE mode to control and or otherwise mitigate a hazard for which the personnel have adequate equipment and training.
         1. In the absence of adequate equipment and training to mitigate a specific hazard, personnel of the Department shall function in a DEFENSIVE mode and request outside agencies for additional assistance.
ii. The Incident Commander shall have the right and duty to call upon whatever means deemed necessary (within reason) to handle the emergency.
   1. The Northland Fire Chiefs Haz-Mat Response team must be contacted as the first additional responding resource.
      a. Any additional resources should be requested under the guidance of the NFCC Haz-Mat Team Commander.
         i. Specific consideration shall be given to current agreements between the agency and neighboring agencies for Haz-Mat responses and resources activated by the Lees Summit Mutual-Aid Coordinator.
            1. Examples of Additional Resources:
               a. Additional Haz-Mat Response Teams
               b. Private Haz-Mat removal companies
               c. City Public Works Departments
               d. Utility Companies
               e. Private contractors

2. Incident Response (Running Orders)
   a. Initial Haz-Mat response inside the City will consist of the following:
      i. One Pumper company, One Administrative Chief, and a recall of part-time personnel.
         1. Additional units can be added and/or detached by the IC at any time during the course of the incident.
         2. Incidents involving exposure, injury, and/or illness will automatically have a Medical Unit attached to them.

   b. When the IC determines the incident to be of a "working nature" a Medical Unit (if not previously) will be attached for EMS stand-by and an "All Call" will be issued of all off duty personnel.
      i. When the incident is determined to be of a working nature a Scene Safety Officer must be assigned to oversee operational and personnel safety.

   c. When requesting response from outside agencies such as The Northland Fire Chiefs Haz-Mat Response team minimum on scene resources are as follows.
      i. Units must be designated to the scene for the duration of the incident.
         1. Incident Commander
         2. Pumper company
         3. Medical unit
General Continued

3. Incident Response (Initial Actions)
   a. While responding information should be obtained from dispatch as to the nature of the alarm.
      i. Dispatch should obtain and relay the following.
         1. Is the incident at a fixed facility of the scene of a transportation accident?
         2. The type of material involved.
         3. How much (amount) of material present.
         4. Type and size of container.
         5. Is there a spill or is container actively leaking?
         6. What state is the material in (solid / liquid / gas)?
         7. Will the caller meet the Fire Department?
         8. Are there any injuries or suspected / real exposures?
   b. When responding into a Haz-Mat scene the first arriving Officer should establish command and begin size-up.
      i. The IC or first Fire Department unit on scene shall determine if hazardous materials are involved in the incident.
         1. When approaching, slow down or stop to assess any visible activity occurring. Evaluate effects of wind, topography, and location of the situation.
            a. Units first on scene must safely attempt to identify the following:
               i. Type of material involved.
               ii. Quantity of material involved.
               iii. Possibility of contamination.
               iv. Immediate exposure problem(s).
               v. Threat to life safety.
         b. Unknown chemicals and IDLH greater than the level of protective equipment on scene.
            i. Units must immediately call upon additional outside resources and stage in a safe area.
               1. Deny entry and attempt to isolate the surrounding area.
               2. Evacuations may be necessary of the unaffected areas due to potential exposure.
            ii. ESFD Units must not enter into IDLH environments requiring Advanced levels of personal protective equipment.
               1. Advanced levels of PPE would indicate any area calling for greater than Level D (Full bunker gear and SCBA) protection.
c. When entering a zone that is determined safe for Level D protection.
   i. Use of the "2 in 2 out" rule and proper PPE must apply for the IDLH.

d. Command should advise all other units to stage until instructed to take specific action.
   i. Units must stage in a safe location, taking into account wind, spill flow, explosion potential, and similar factors in any situation.
   ii. The IC must consciously avoid committing incoming units to a dangerous situation.

2. If the Haz-Mat is determined to be a low level threat and able to be mitigated by the Fire Department then phone consultation with DNR, manufacturer, or private Haz-Mat cleanup crew is advised.

3. Any type of incident involving release of Haz-Mat into ponds, lakes, or streams along with possible soil contamination require an immediate notification of Missouri Department of Natural Resources.
   a. Public Works including the Water Department and Storm Water management should also be notified.

4. Incidents that are determined by the IC to be out of the scope of the Fire Department's abilities to handle and requiring additional assistance from outside agencies.
      i. First agency notified when requesting additional on scene assistance.
      1. If NFCC is unable to respond or is ill equipped to handle the situation then assistance should be requested from the Lee Summit Mutual-Aid Coordinator, who will aid in dispatching adequate resources.

b. The IC at any time can request additional assistance from any State or local organizations with expertise and/or resources not provided by the Fire Department for operating on Haz-Mat scenes.
   i. Missouri Department of Natural Resources
   ii. Chem-Trec
   iii. Environmental Protection Agency
General Continued

4. Fire Department Haz-Mat Scene Operations.
   a. All operations on scene will be conducted under the order of the IC.
      i. Outside agencies conducting on scene operations will be doing so under the
         jurisdiction of the Fire Department unless the scene is released to them by the IC.
         1. Outside agencies must provide a Haz-Mat Commander to assist the IC
            with scene management and mitigation of the incident.
   b. Fire Department personnel may assist operations in accordance to their level of training
      and certification.
      i. Assistance given will be under the direction of the operating Haz-Mat Response
         Team or Haz-Mat Removal Company and only under order of the IC and Haz-
         Mat Commander.
   c. Fire Department Personnel must isolate the area and deny entry for all types of Haz-Mat
      alarms until the scene can be properly assessed.
      i. Assistance may be requested from Law Enforcement or facility security
         personnel.
   d. Personnel Protective Equipment.
      i. Minimum PPE for first response units.
         1. The IC or first responding unit must consult a current ERG to best
            ascertain the appropriate PPE level for incoming personnel.
            a. Can vary depending on the chemical involved and the
               information obtained through the initial dispatch and scene size- up.
         2. Whenever the hazard is unknown or the threat level calls for a high level
            of PPE then available on scene.
            a. Minimum PPE for any unknown chemical or suspected inhalation
               or splash hazards will be full turnout gear and SCBA (Level D).
               i. ESFD units must not enter any scene where the hazard is
                  unknown.
                  1. Units will stage in a determined safe location,
                     attempt to isolate the area, deny entry, and if possible attempt to identify released chemical(s).
      ii. Advanced levels of Haz-Mat PPE
          1. All advanced entry levels of PPE will be provided and utilized by
             members of NFCC Haz-Mat Response Team or responding outside
             agency.
            a. ESFD members may be called upon to utilize splash and
               respiratory protection for decontamination efforts.
   e. Establishing ZONES.
      i. On scene personnel must establish ZONES in accordance to the recommended
         response guidelines found in the ERG and taking in to consideration the
         conditions found on scene.
      ii. Zones have the ability to change as an incident progresses.
1. When establishing Zones personnel must take into account for:
   a. Weather conditions
   b. Topography and physical features of the scene
   c. Possible chemical / hazard present
   d. Type of decontamination procedures
   e. Proximity to residential / industrial areas
   f. Exposure potential

   i. HOT ZONES (High Hazard)
      1. Personnel must not be allowed enter HOT ZONES and must set up barricades to deny further entry
         a. This is the area where contamination does or could occur. All personnel entering the HOT ZONE must wear the appropriate level of PPE.
      2. The IC must establish entry and exit checkpoints at the entrance to the HOT ZONE for control of the flow of personnel and equipment.
      3. The outer boundary of HOT ZONE should be established by visually surveying the immediate environment of the incident and determining where the hazardous involved are located including drainage.
         a. Consider the distances needed to prevent fire or explosion from affecting personnel outside the zone, the physical area necessary to conduct site operations and the potential for contaminants to be blown from the area. Also, consider a change in wind direction.
         b. Physically mark the HOT ZONE with marker tape or some type of visible landmarks,

   ii. WARM ZONE: (Minimal Hazard)
      1. This Zone surrounds the (HOT ZONE).
         a. Acts as a buffer between the hazardous area (HOT ZONE) and the safe area (COLD ZONE).
         b. All types of decontamination, triage, and entry team staging will be set up within this zone.
         c. Initially these areas are non-contaminated but as operations proceed, the area around the decontamination stations will become contaminated, but to a much lesser degree.
d. It is essential to control any run off from these contaminated areas.
e. The boundary of the WARM ZONE must be marked by tape or some other physical barrier.

iii. COLD ZONE (Potential Hazard)
1. Zone furthest away from the Haz-Mat release, also known as the Support Zone.
   a. This Zone begins at the outer boundary of the Warm Zone and continues to the barricade limiting access to the general public.
      i. Staging area for personnel and equipment.
      ii. No contaminants from the WARM ZONE should be allowed to enter this Zone.
      iii. The IC will also be located in this Zone.

f. Decontamination
   i. Decontamination is the removal of hazardous substances from employees and their equipment to the extent necessary to preclude the occurrence of foreseeable adverse health effects.
      1. Proper decon is essential to ensure the safety of personnel and property. The decision to implement all or part of the decon procedure is based upon a field analysis of the hazardous material and risk involved. The safety and health hazards or the contaminants at any incident define how complex the decon operation will be.
      2. As a rule of thumb the level of protection should not be less than one level below that used by the entry team.
   ii. Any scene requiring decontamination of victims or equipment will require the activation of the NFCC Haz-Mat Response Team.
   iii. Fire Department Personnel must take steps to ensure that the decon area is set up the proper area.
      1. The ideal decon site is upwind, uphill from the incident and remote from drains, manholes and waterways, yet close enough to limit the spread of contaminants, and allow for containment of all decon materials.
      2. Any run off or residue from the decon procedures must be contained for proper disposal. All equipment used for decontamination must be either decontaminated or properly disposed.
   iv. Basic techniques of decontamination used by ESFD.
      1. Dilution
         a. Use of water to flush the hazardous material from protective clothing and equipment.
b. Most commonly used method.
c. Consider water reactivity before employing this method. Also consider how contaminated dilute solution will be disposed.

2. Absorption
   a. Absorbing or picking up a hazardous material.
   b. Is primarily used for equipment and property and has limited application for personnel.
   c. Acceptable absorbents:
      i. Soil
      ii. Diatomaceous earth
      iii. Vermiculite
      iv. Anhydrous fillers
      v. Sand
      vi. Other commercially available products
   d. Absorbent materials should be inert or have no active properties.

v. Decon operations
   1. NFCV has available small as well as large scale (Mass) decontamination equipment.
      a. This can be used alone or in tandem with decon provided from Fire Department personnel.
         i. The type of equipment used will be based on several factors.
            1. Type of material involved.
            2. Exposure potential.
            3. Life threat.
            4. Scene topography.
      b. Fire Department Pumpers and/or Quints may be called upon to provide for large scale decon or (Mass decon) in incidents involving multiple victims where dilution is an acceptable method of decon.
         i. Fire Department apparatus involved in decontamination operations can themselves become contaminated from runoff and airborne exposures.
            1. Placement and apparatus protection are of key importance when initially setting up decon operations using fire apparatus.

  g. Releasing the scene
     i. All Haz-Mat scenes whether mitigation was handled by the Fire Department or outside agency must be deemed safe before the scene can be cleared.
        1. Additional resources such as Hazardous Material Removal Companies may be called in at the spiller's expense to remove the hazard and further decontaminate the area.
2. Missouri Department of Natural Resources, EPA, and Chem-Trec can also be consulted in attempting to gain knowledge of proper disposal procedures.
   a. Haz-Mat determined not needing professional removal.
      i. Units should still consult outside resources to assess any additional response needed on scene and proper disposal procedures.
         1. This should be done to ensure the safety of all involved and limit the liability of the Fire Department.
   b. Once the release of Haz-Mat has been mitigated, the scene has been cleared of Haz-Mat, or turned over to an outside agency.
      i. Fire Department units can be cleared at the discretion of the Haz-Mat agency on scene and the IC.
      ii. The Fire Department may be requested to provide units for stand-by or operations depending on the needs on scene.
Purpose

To establish guidelines in regards to the Fire Department’s response of Hazardous Materials incidents involving the chemical element Chlorine (Cl).

Scope

The scope is to provide employees a standard to follow while responding and operating at Hazardous Materials incidents involving Chlorine (Cl). It will detail the standard response assignments for a Chlorine involved incident, procedures to be followed regarding recognition, notification, and abatement of the exposed material.

General

1. General Information
   a. Chlorine (Cl) a lung irritant; (Guide 124) (UN1017) is a greenish-yellow gas at room temperature; clear, amber-colored liquid under increased pressure or at temperatures below -30°F (-34°C).
      i. Toxic gas with corrosive properties. The lowest level at which humans can smell chlorine and notice it’s irritant properties generally provides sufficient warning of exposure.
         1. Exposure symptoms:
            a. Blurred vision
            b. Burning pain, redness, and blisters on the skin if exposed to gas. Skin injuries similar to frostbite can occur if it is exposed to liquid chlorine
            c. Burning sensation in the nose, throat, and eyes
            d. Coughing
e. Chest tightness
f. Difficulty breathing or shortness of breath. These may appear immediately if high concentrations of chlorine gas are inhaled, or they may be delayed if low concentrations of chlorine gas are inhaled.
   i. Fluid in the lungs (pulmonary edema) that may be delayed for a few hours
   g. Nausea and vomiting
   h. Watery eyes
   i. Wheezing

2. Chlorine itself is non-flammable but it is a strong oxidizing agent and may form explosive mixtures with combustibles, organic, or other oxidizable materials.
   ii. Due to its vapor density being heavier than air, Cl gas will tend to accumulate in pockets or low lying areas (i.e. basements / sewers).
   iii. Usually shipped in steel cylinders as a compressed liquefied gas.
   iv. Also found in a granular chemical mixture in residential and light commercial settings.
   v. Generally used for disinfection of swimming pools and drinking water supplies.

2. Level of Response
   i. In accordance with Special Operations policy (204-1) covering Hazardous Materials Response, all initial responses shall be considered to be at the (HAZARDOUS MATERIALS OPERATIONS LEVEL) allowing for limited Offensive operations, unless otherwise limited to defensive operations due to lack of adequate resources or determined by the Incident Commander.
   ii. Chlorine responses may require additional outside resources in the form of mutual-aid Haz-Mat Response Teams and/or private hazardous materials removal companies.
      1. Guidelines for additional resources are outlined in Special Operations policy (204-1) covering Hazardous Materials Response.

b. Responding to a Chlorine incident
   i. When responding to a potential Cl leak, units should ascertain the wind direction and speed.
      1. Units should approach from an upwind direction and constantly monitor changing weather conditions.
         a. At all times while responding to or after identifying a Cl leak; personnel in the immediate area will be in full PPE and SCBA.
         b. Firefighting PPE is not a suitable barrier for direct spill contact and will provide limited protection in fire situations ONLY.
      2. When responding on possible Chlorine incidents; ESFD units’ primary objectives will be to identify the product involved, isolate and evacuate the exclusion zone; and if possible remove and decontaminate any viable victims.
      3. A confirmed Chlorine leak will require immediate activation of additional Hazardous Materials resources as designated by the Incident Commander under ESFD policy (204-1).
a. ESFD units are not trained or equipped to enter the immediate IDLH areas as outlined below.

4. Exclusion Zones:
   a. First responding units should establish an Exclusion or Hot zone in line with the Guidelines set forth in the Emergency Response Guidebook (ERG).
      i. Isolation area for spills less than 53 gallons
         1. Initial isolation: 330 feet in all directions per NRG.
         2. Downwind isolation:
            a. Daytime: 0.2 Miles
            b. Night: 0.8 Miles
      ii. Isolation area for spills greater than 53 gallons
         1. Initial isolation: 800 feet in all directions per NRG.
         2. Downwind Isolation:
            a. Daytime: 1.5 Miles
            b. Night: 4.2 Miles
   b. For tank, rail car, or tank truck involvement consider initial isolation area of 0.5 miles in all directions.

5. Product with fire involvement:
   a. Use appropriate extinguishing agent for material that is on fire.
      i. For small fires, use water only; do not use dry chemical, carbon dioxide, or Halon™. Contain the fire and let it burn. If the fire must be fought, water spray or fog is recommended. Do not get water inside containers. Move containers from the fire area if it is possible to do so without risk to personnel. Damaged cylinders should be handled only by specialists.
      ii. For fire involving tanks, fight the fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after the fire is out. Do not direct water at the source of the leak or at safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tanks. Always stay away from tanks engulfed in fire.
      iii. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from the area and let the fire burn.

6. Target hazards:
   a. Excelsior Springs Water Treatment Facility – 108th Street and N Hwy
   b. Excelsior Springs Community Center (Pool) – Tiger Drive and Wornall Road
   c. Lake Maurer – Calvary Road and Victory Drive
   d. Elks Club – 421 S Titus Ave
   e. Lake Doniphan Church Camp – Lake Doniphan Road
## SAFETY DATA SHEET

**Chlorine**

### Section 1. Identification

<table>
<thead>
<tr>
<th>GHS product identifier</th>
<th>: Chlorine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical name</td>
<td>chlorine</td>
</tr>
<tr>
<td>Other means of ...</td>
<td>Cl₂; Bertholite; Chlor; Chlore; Chlorine mol.; Cloro; Molecular chlorine; UN 1017</td>
</tr>
<tr>
<td>Product use</td>
<td>Synthetic/Analytical chemistry.</td>
</tr>
<tr>
<td>Synonym</td>
<td>Cl₂; Bertholite; Chlor; Chlore; Chlorine mol.; Cloro; Molecular chlorine; UN 1017</td>
</tr>
<tr>
<td>SDS #</td>
<td>001015</td>
</tr>
</tbody>
</table>
| Supplier's details     | Airgas USA, LLC and its affiliates  
                          | 259 North Radnor-Chester Road  
                          | Suite 100  
                          | Radnor, PA 19087-5283  
                          | 1-610-687-5253 |
| Emergency telephone ...| 1-866-734-3438 |

### Section 2. Hazards identification

<table>
<thead>
<tr>
<th>OSHA/HCS status</th>
<th>This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).</th>
</tr>
</thead>
</table>
| Classification  | OXIDIZING GASES - Category 1  
| of the          | GASES UNDER PRESSURE - Compressed gas  
| substance or    | ACUTE TOXICITY (Inhalation) - Category 2  
| mixture         | SKIN CORROSION/IRRITATION - Category 1  
|                 | SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1  
|                 | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
|                 | AQUATIC HAZARD (ACUTE) - Category 1 |

**GHS label elements**

<table>
<thead>
<tr>
<th>Hazard pictograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Pictograms]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Danger</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Hazard statements</th>
</tr>
</thead>
</table>
| May cause or intensify fire; oxidizer.  
| Contains gas under pressure; may explode if heated.  
| May cause frostbite.  
| Fatal if inhaled.  
| Causes severe skin burns and eye damage.  
| Corrosive to respiratory tract.  
| Very toxic to aquatic life. |

### Precautionary statements

---

**Date of issue/Date of revision**: 4/26/2015  
**Date of previous issue**: 10/15/2014  
**Version**: 0.03  
1/14

Powered by IHS
Section 2. Hazards identification

General
Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Open valve slowly. Use only with equipment cleaned for Oxygen service. Always keep container in upright position.

Prevention
Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves free from grease and oil. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe gas. Wash hands thoroughly after handling. Use and store only outdoors or in a well ventilated place.

Response
Collect spillage. In case of fire: Stop leak if safe to do so. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

Storage
Store locked up. Protect from sunlight. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal
Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazard not otherwise classified
In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

Section 3. Composition/information on ingredients

Substance/mixture
Substance

Chemical name
chlorine

Other means of identification
Cl2; Bertholite; Chloor; Chlor; Chlore; Chlorine mol.; Cloro; Molecular chlorine; UN 1017

CAS number/other identifiers

<table>
<thead>
<tr>
<th>CAS number</th>
<th>Product code</th>
</tr>
</thead>
<tbody>
<tr>
<td>7782-50-5</td>
<td>001015</td>
</tr>
</tbody>
</table>

Ingredient name | % | CAS number
---|---|---
chlorine | 100 | 7782-50-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact
Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Date of issue/Date of revision : 4/26/2015. Date of previous issue : 10/15/2014. Version : 0.03 2/14
## Section 4. First aid measures

**Inhalation**

Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact**

Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**

As this product is a gas, refer to the inhalation section.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact**

Causes serious eye damage.

**Inhalation**

Fatal if inhaled. May cause respiratory irritation.

**Skin contact**

Causes severe burns.

**Frostbite**

Try to warm up the frozen tissues and seek medical attention.

**Ingestion**

May cause burns to mouth, throat and stomach. As this product is a gas, refer to the inhalation section.

### Over-exposure signs/symptoms

**Eye contact**

Adverse symptoms may include the following:
- pain
- watering
- redness

**Inhalation**

Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

**Skin contact**

Adverse symptoms may include the following:
- pain or irritation
- redness
- blistering may occur

**Ingestion**

Adverse symptoms may include the following:
- stomach pains

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician**

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**

No specific treatment.

**Protection of first-aiders**

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)
Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: None known.

**Specific hazards arising from the chemical**: Contains gas under pressure. Oxidizing material. This material increases the risk of fire and may aid combustion. Contact with combustible material may cause fire. In a fire or if heated, a pressure increase will occur and the container may burst or explode. This material is very toxic to aquatic life. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials: halogenated compounds

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions**: Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

**Methods and materials for containment and cleaning up**

**Small spill**: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

**Large spill**: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Do not breathe gas. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep away from clothing, incompatible materials and combustible materials. Keep reduction valves free from grease and oil. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Store locked up. Separate from acids, alkalies, reducing agents and combustibles. Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>chlorine</td>
<td>ACGIH TLV (United States, 3/2012).</td>
</tr>
<tr>
<td></td>
<td>STEL: 2.9 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>STEL: 1 ppm 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>TWA: 1.5 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.5 ppm 8 hours.</td>
</tr>
<tr>
<td></td>
<td>NIOSH REL (United States, 1/2013).</td>
</tr>
<tr>
<td></td>
<td>CEIL: 1.45 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>CEIL: 0.5 ppm 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>OSHA PEL (United States, 6/2010).</td>
</tr>
<tr>
<td></td>
<td>CEIL: 3 mg/m³</td>
</tr>
<tr>
<td></td>
<td>CEIL: 1 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL: 3 mg/m³ 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>STEL: 1 ppm 15 minutes.</td>
</tr>
<tr>
<td></td>
<td>TWA: 1.5 mg/m³ 8 hours.</td>
</tr>
<tr>
<td></td>
<td>TWA: 0.5 ppm 8 hours.</td>
</tr>
</tbody>
</table>

Appropriate engineering controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Date of issue/Date of revision: 4/26/2015. Date of previous issue: 10/15/2014. Version: 0.03 5/14

Powered by IHS
Section 8. Exposure controls/personal protection

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state: Gas. [GREENISH-YELLOW GAS WITH SUFFOCATING ODOR]
Molecular weight: 70.9 g/mole
Molecular formula: Cl2
Boiling/condensation point: -34°C (-29.2°F)
Melting/freezing point: -101°C (-149.8°F)
Critical temperature: 143.85°C (290.9°F)
Odor: Pungent.
Odor threshold: Not available.
pH: Not available.
Flash point: [Product does not sustain combustion.]
Burning time: Not applicable.
Burning rate: Not applicable.
Evaporation rate: Not available.
Flammability (solid, gas): Extremely flammable in the presence of the following materials or conditions: reducing materials, combustible materials, organic materials and alkalis.
Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits: Not available.
Vapor pressure: 85.3 (psig)
Vapor density: 2.5 (Air = 1)
Specific Volume (ft³/lb): 5.4054
Gas Density (lb/ft³): 0.185
Relative density: Not applicable.
Solubility: Very slightly soluble in the following materials: cold water.
Solubility in water: 7.41 g/l
Partition coefficient: n-octanol/water: Not available.
Auto-ignition temperature: Not available.
 Decomposition temperature: Not available.
SADT: Not available.
Viscosity: Not applicable.

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability: The product is stable.
Possibility of hazardous reactions: Hazardous reactions or instability may occur under certain conditions of storage or use. Conditions may include the following:
contact with combustible materials
Reactions may include the following:
risk of causing fire
Conditions to avoid: No specific data.
Incompatibility with various substances: Extremely reactive or incompatible with the following materials: reducing materials, combustible materials, organic materials and alkanes.
Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>chlorine</td>
<td>LC50 Inhalation Gas.</td>
<td>Rat</td>
<td>293 ppm</td>
<td>1 hours</td>
</tr>
</tbody>
</table>

Irritation/Corrosion
Not available.

Sensitization
Section 11. Toxicological information

Not available.

Mutagenicity
Not available.

Carcinogenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>chlorine</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
</tbody>
</table>

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure
Not available.

Potential acute health effects

Eye contact: Causes serious eye damage.
Inhalation: Fatal if inhaled. May cause respiratory irritation.
Skin contact: Causes severe burns.
Ingestion: May cause burns to mouth, throat and stomach. As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following:
- pain
- watering
- redness

Inhalation: Adverse symptoms may include the following:
- respiratory tract irritation
- coughing

Skin contact: Adverse symptoms may include the following:
- pain or irritation
- redness
- blistering may occur

Ingestion: Adverse symptoms may include the following:
- stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Section 11. Toxicological information

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure
Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects
Not available.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates
Not available.

Section 12. Ecological information

Toxicity
Not available.

Persistence and degradability
Not available.

Bioaccumulative potential
Not available.

Mobility in soil
Soil/water partition coefficient (Koc) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is
Section 13. Disposal considerations

not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT</th>
<th>TDG</th>
<th>Mexico</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1017</td>
<td>UN1017</td>
<td>UN1017</td>
<td>UN1017</td>
<td>UN1017</td>
<td>UN1017</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>CHLORINE</td>
<td>CHLORINE</td>
<td>CHLORINE</td>
<td>CHLORINE</td>
<td>CHLORINE</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>2.3 (5.1, 8)</td>
<td>2.3 (5.1, 8)</td>
<td>2.3 (5.1, 8)</td>
<td>2.3 (8)</td>
<td>2.3 (8)</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Additional information

Inhalation hazard zone A

The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes.

Reportable quantity
10 lbs / 4.54 kg
Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

Limited quantity
Yes.

Packaging instruction
Passenger aircraft
Quantity limitation: Forbidden.
Cargo aircraft
Quantity limitation: Forbidden.

Special provisions
2, B9, B14, T50, T919

The marine pollutant mark is not required when transported by road or rail.

Explosive Limit and Limited Quantity Index
0

ERAP Index
500

Passenger Carrying Ship Index
Forbidden

Passenger Carrying Road or Rail Index
Forbidden

The environmentally hazardous substance mark may appear if required by other transportation regulations.

Passenger and Cargo Aircraft
Quantity limitation: 0 Forbidden
Cargo Aircraft Only
Quantity limitation: 0 Forbidden

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Date of issue/Date of revision: 4/26/2015. Date of previous issue: 10/15/2014. Version: 0.03 10/14
Section 14. Transport information

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

U.S. Federal regulations:
- TSCA 8(a) CAIR: chlorine
- TSCA 8(a) CDR Exempt/Partial exemption: Not determined
- United States inventory (TSCA 8b): This material is listed or exempted.
- Clean Water Act (CWA) 311: chlorine

Clean Air Act (CAA) 112 regulated toxic substances: chlorine

- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Listed
- Clean Air Act Section 602 Class I Substances: Not listed
- Clean Air Act Section 602 Class II Substances: Not listed
- DEA List I Chemicals (Precursor Chemicals): Not listed
- DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>EHS</th>
<th>SARA 302 TPQ (lbs)</th>
<th>SARA 304 RQ (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>chlorine</td>
<td>100</td>
<td>Yes.</td>
<td>100</td>
<td>10</td>
</tr>
</tbody>
</table>

SARA 304 RQ: 10 lbs / 4.5 kg

SARA 311/312

Classification: Sudden release of pressure
Immediate (acute) health hazard

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>chlorine</td>
<td>100</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

SARA 313

Date of issue/Date of revision: 4/26/2015. Date of previous issue: 10/15/2014. Version: 0.03 11/14.
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td>chlorine</td>
<td>7782-50-5</td>
</tr>
<tr>
<td>Supplier notification</td>
<td>chlorine</td>
<td>7782-50-5</td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : This material is listed.
New York : This material is listed.
New Jersey : This material is listed.
Pennsylvania : This material is listed.
Canada inventory : This material is listed or exempted.

International regulations

International lists:
- Australia inventory (AICS): This material is listed or exempted.
- China inventory (IECSC): This material is listed or exempted.
- Japan inventory: Not determined.
- Korea inventory: This material is listed or exempted.
- Malaysia Inventory (EHS Register): This material is listed or exempted.
- New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
- Philippines Inventory (PICCS): This material is listed or exempted.
- Taiwan Inventory (CSNN): Not determined.

Chemical Weapons
- Convention List Schedule I Chemicals: Not listed
- Chemical Weapons
- Convention List Schedule II Chemicals: Not listed
- Chemical Weapons Convention List Schedule III Chemicals: Not listed

Canada

WHMIS (Canada):
- Class A: Compressed gas.
- Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
- Class E: Corrosive material

CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPR: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements:
- Class A: Compressed gas.
- Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
- Class E: Corrosive material

Hazardous Material Information System (U.S.A.)

Health 3

Date of issue/Date of revision: 4/26/2015. Date of previous issue: 10/15/2014. Version: 0.03 12/14
Section 16. Other information

Flammability
0

Physical hazards
2

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-8868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health
0

Instability/Reactivity

Special

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing: 4/26/2015.
Date of issue/Date of revision: 4/26/2015.
Date of previous issue: 10/15/2014.
Version: 0.03

Key to abbreviations: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations/ACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Section 16. Other information

Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health
TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

References : Not available.

❖ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.
EPA Chemical Emergency Preparedness and Prevention Advisory

SWIMMING POOL CHEMICALS: Chlorine

This advisory to Local Emergency Planning Committees (LEPCs) suggests that you pay special attention to swimming pool chemicals this summer. Many chemicals used at swimming pools may release chlorine - an extremely hazardous substance (EHS). Careless storing, wetting, mixing, or the contamination of any of these chemicals or the systems used to feed them can cause fires, explosions, burns, and possibly the release of gaseous chlorine, resulting in injuries or death. Facilities should train all employees, including summer employees, on the safe use and potential hazards of these chemicals.

EPA stresses that although mishandling of these chemicals can cause harm, there is no cause for undue alarm about their presence in the community.

One example of an incident involving chemicals that release chlorine was a fire at a chemical distribution facility in Springfield, Massachusetts, on June 17, 1988. Rainwater leaked into a storage room where 600 to 800 cardboard drums, each containing 300 pounds of solid swimming pool chemicals (probably trichloroisocyanuric acid), were kept. The chemicals exploded, starting a fire which set off the sprinkler system. That water soaked the remaining drums and set off more explosions, spreading the fire to other rooms in the building. The fire, explosions, and release to air lasted three days. Over 25,000 people were evacuated; 275 people were sent to the hospital with skin burns and respiratory problems.

HOW POOL CHEMICALS WORK

At many pools, gaseous chlorine (an EHS) is fed directly into pool water to kill bacteria and other microorganisms. Almost all pools using gaseous chlorine use cylinders containing 100 to 150 pounds of chlorine.

At other pools solid, granular, pellet, or stick compounds (e.g., calcium hypochlorite and chlorinated isocyanurates) or liquids (e.g., sodium hypochlorite) are added to the water. In contact with water, these solid and liquid chemicals dissolve and form hypochloric acid or chlorine ions to perform the same disinfecting function as chlorine.

SOME STEPS FOR LEPCs

While emergency response plans are required to address gaseous chlorine (an EHS) in excess of the threshold planning quantity (100 pounds), they are not required to address these compounds under section 302 of the Emergency Planning and Community Right-to-Know Act (commonly known as SARA Title III). However, EPA and the National Response Team's Hazardous Materials Emergency Planning Guide (NRT-1) recommend that emergency plans address all hazardous materials that present a risk to the community. Since these compounds can release chlorine and are so widely used, EPA recommends they receive careful attention in both planning and emergency response. EPA suggests that local
emergency planning committees (LEPCs) take the following steps:

- Identify the swimming pool chemicals that will potentially release chlorine gas. The chemical names of these substances are sodium hypochlorite, calcium hypochlorite, and chlorinated cyanic acids. The box below lists some brand names that contain these chemicals.

**SOME BRAND NAMES**

**Calcium Hypochlorite**

Olin trademarks for calcium hypochlorite products include:

- CCH®
- Sock It®
- Prochlor®
- HTH®
- Sun Burst®

PPG trademarks for calcium hypochlorite products include:

- Inducolor®
- Sustain®
- Pittab®

**Chlorinated Isocyanurates**

Olin trademarks for chlorinated isocyanurates include:

- CDB®
- CDB Clearon®
- Constant Chlo®
- Sun®

Monsanto trademark for chlorinated isocyanurates is: ACL®

Note: Many of these pool chemicals are sold to processors and repackers who resell under various brand names. Such packages will always identify the product inside by its chemical name.

- Review Title III plans to ensure that facilities handling large quantities of these chemicals are covered and that response issues have been addressed. Facilities that should be checked include:
  - Swimming pool chemical distributors;
  - Swimming pool supply stores;
  - Swimming pools located, for example, in health spas, community centers, schools, and country clubs;
  - Public drinking water systems;
  - Waste treatment facilities; and
  - Hazardous waste treatment facilities.

- If appropriate, inform owners of residential pools of the hazards related to chlorine.

- Be sure that the facilities covered by sections 302, 311, and 312 of SARA Title III have provided adequate information about the chemicals on hand directly to the LEPC and local fire departments. Because many swimming pool chemicals may not be listed as extremely hazardous substances and in some cases reporting thresholds may not be met, you may need to ask facility representatives for chemical information. Also, ask about facility emergency response plans, so the LEPC and fire departments can use them to prepare pre-incident plans.

**SOME STEPS FOR FACILITIES**

- In cooperation with LEPCs and local response officials, ensure attention to storage methods, fire safety systems, and handling and use of chemicals. Be sure that the likelihood of releases during handling and storage is minimized. Look especially at situations where water is a factor since most dry chemicals containing chlorine are reactive with water.

- Be sure the area used to store potential chlorine releasing chemicals is immune to any influx of water from such things as a leaking roof, uncovered windows, leaking pipes, fire sprinklers, hose outlet in the vicinity, splashing from the pool, flooding of the floor (keep the containers off the floor), and the effect of exceptionally high humidity on open containers. Be aware of potential explosive situations. Explosions have been known to occur when a pool user switched from one type of chlorine tablet in a pool chlorinator to a different type without thoroughly
cleaning the device. Even similar chemicals like the chlorinated cyanuric acids may react violently with other types of chlorinated cyanurate compounds or with sodium or calcium hypochlorites.

- Cylinders of chlorine gas should be stored separately from all other compressed gases, hydrocarbons (gasoline or other fuels), ether, turpentine, and metal filings, shavings, or dust. Contact with these substances poses unusual fire and explosion hazards.

- Cylinders of chlorine gas should be stored outdoors or in well-ventilated, detached, or segregated areas of noncombustible construction to prevent extensive damage from explosion and fire.

- Check that no containers are leaking, broken, or torn. Ensure that only one container of a product is unsealed at any time.

- Refer to Department of Transportation (DOT) regulations for types of containers that must be used for shipping swimming pool chemicals -- both in the gaseous as well as the solid compound forms. For example, DOT requires metal barrels or drums and packaging to protect against permeation of moisture for calcium hypochlorite and trichloroisocyanuric acid.

- Ensure an adequate training program to educate all facility personnel on the hazards of chlorine gas as well as chlorine-producing chemicals.

---

**OTHER INFORMATION**

Information on chlorine and the Emergency Planning and Community Right-to-Know Act can be found in many readily available sources. The following is a listing of just a few of these sources:

- **Safety Guidelines for Residential Swimming Pool Chlorination** (pamphlet 81) and/or **Chlorine Safety at Non-residential Swimming Pools** (pamphlet 82), both available free of charge from The Chlorine Institute, 2001 L Street, NW, Washington, DC 20036, (202) 775-2790. The Chlorine Institute has extensive literature on chlorine and chlorine cylinders.

- **1987 Emergency Response Guidebook**, published by DOT. (The 1990 version is currently being printed.) Copies are available by writing to:

  Office of Hazardous Materials Transportation (DHH-51)
  Research and Special Programs Administration
  U.S. Department of Transportation
  Washington, DC 20590

- **Response Information Data Sheets** found in CAMEO™ II, a computer-based planning and response management program, that is available from The National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611.

- CHEMTREC, a 24-hour, seven-day a week emergency hotline that provides information and assistance to responders during an emergency. Contact (800) 424-9300 or (202) 483-7616. (Note: CHEMTREC is for emergency use only.)

- Your County or State Health Agency.

- Your State Emergency Response Commission.

- EPA’s Emergency Planning and Community Right-to-Know Information Hotline at (800) 535-0202, or (202) 479-2449 from Monday to Friday, 8:30 a.m. to 7:30 p.m., Eastern time.
This advisory is the first of a new series which EPA is publishing to alert LEPCs to hazards posed by hazardous substances that have resulted in accidents where death, injury, or evacuations have occurred. LEPCs are responsible for emergency planning for hazardous materials and for collection and managing data on hazardous chemicals present in their community.

Please send comments on this Advisory and suggestions for future subjects to:

CEPP Advisory
EPA OS-120
401 M Street, SW
Washington, DC 20460
[DATE]

[RESIDENT / BUSINESS]
[ADDRESS]
[CITY, STATE ZIP]

Re: Illicit Discharge or Connection to City Stormwater System

Dear [RESIDENT / BUSINESS]:

An investigation by City staff has determined that there is an illicit discharge or connection to the City stormwater collection system in violation of Chapter 31 of the City Stormwater Management Ordinance.

Section 31-57 of the City of Liberty Municipal Code prohibits any discharge to the municipal separate storm sewer system (MS4) or any watercourse of anything other than stormwater. Section 31-57 also prohibits the construction, use, maintenance or continued existence of illicit connections to the storm drain system which expressly includes, without limitation, 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.

The location and description of the illicit discharge and/or connection discovered on your property in violation of the City Code is described as follows:

[LOCATION AND DESCRIPTION OF DISCHARGE / CONNECTION]

You are hereby notified to correct this violation and notify the City Engineer in writing of the corrective action within twenty-four (24) hours. If you fail to comply, the City Engineer will declare the illicit connection a nuisance and follow the abatement procedures for nuisances set forth in Chapter 21 of the Municipal Code.

If you have any questions, you may contact me at 816-439-4502.

Sincerely,

Brian Hess, P.E.
Assistant Director of Public Works / City Engineer

Cc: Engineering File
ILLICIT DISCHARGE REPORTING FORM

REPORTING INFORMATION

DATE ________________  TIME ________________

CALLER/REPORTING PERSON:

NAME: ________________________________
PHONE: ________________________________
BUSINESS: ________________________________
ADDRESS: ________________________________

BRIEF SUMMARY:

____________________________________
____________________________________

NAME OF PERSON TAKING CALL/REPORT: ________________________________

ILLICIT DISCHARGE INFORMATION

WHEN WAS THE DISCHARGE SEEN?

DATE ________________  TIME ________________

LOCATION (NEAREST INTERSECTION/LANDMARK/DIRECTIONS):

____________________________________

DISCHARGE:

IS THE MATERIAL IN THE STORM DRAIN?  YES / NO
IS THE MATERIAL JUST ON THE HIGHWAY?  YES / NO
IS THE SUBSTANCE A KNOWN HAZARDOUS MATERIAL?  YES / NO
IS THE SUBSTANCE A KNOWN NON-HAZARDOUS MATERIAL?  YES / NO
IS THE SUBSTANCE UNKNOWN AND CANNOT BE IDENTIFIED?  YES / NO

DESCRIPTION OF SUBSTANCE:

____________________________________
____________________________________
Appendix B – Land Disturbance Inspection Checklist for Construction Sites
LAND DISTURBANCE INSPECTION CHECKLIST FOR CONSTRUCTION SITES

Date ___________________________  Building Permit # ___________________________

Project ___________________________  Grading Permit # ___________________________

Contractor ___________________________  Phone # ___________________________

Address of Project ___________________________

<table>
<thead>
<tr>
<th>Site Observations</th>
<th>N/A</th>
<th>Satisfactory</th>
<th>Deficient</th>
<th>Replace</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perimeter Protection (ex: silt fence)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock Piles Stabilized</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sediment Control for disturbed areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ditch – check dams</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inlet protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sediment basins/traps</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erosion at discharge points</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creek degradation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetative cover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filter strips</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rock entrance ways</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mud/Dirt on Streets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Potential Pollutants</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

List problem areas ___________________________

Remarks ___________________________

Inspectors Signature ___________________________  Date _______________
Appendix C – Post-Construction BMP Maintenance Agreement/Covenant Template
STORMWATER MANAGEMENT/BMP FACILITIES MAINTENANCE AGREEMENT
FOR ON-SITE FACILITIES

EXCELSIOR SPRINGS, MISSOURI
PUBLIC WORKS DEPARTMENT
(816)630-0755

THIS agreement made and entered into this ___________ Day of ___________ 20___, by
and between __________________________________________, a __________________________
of
the County of ______________________ in the State of Missouri, Grantor, hereinafter, called
the “Landowner”, and the City of Excelsior Springs, Missouri, a political subdivision of the State
of Missouri, through its Public Works Department, 201 E. Broadway, Excelsior Springs
Missouri, 64024, Grantee, (herein “City”).

WHEREAS, the Landowner is the owner of certain real property described as (Clay County
County Tax Map/Parcel Identification Number)
As recorded by deed in the recorder of deeds of Clay County, Missouri at Deed Book __________
Page ______________ with the legal description of:

(Insert Legal Description)

Hereinafter called the “Property;” and

WHEREAS, the Landowner is proceeding to, or has, made improvements on the Property; and

WHEREAS, the Site Plan/Subdivision Plan know as
(Name of Plan/Development) hereinafter called the “Plan,” which is expressly incorporated
herein by reference, as approved or to be approved by the City, provides for management of
stormwater and/or stormwater water quality treatment within the confines of the Property; and
WHEREAS, the City requires that onsite stormwater management/BMP facilities as shown on the Plan be constructed and adequately maintained by the Landowner, its successors and assigns, including any homeowners association;

WHEREAS, the City Zoning Regulations, Chapter 407 addresses issues relating to the operation and/or maintenance of stormwater systems; and

WHEREAS, the Landowner, its successors and assigns, understands that the execution and adherence to the provisions of this Agreement is a condition precedent to the City’s permitting, approving the plan and/or approving the final plat for the Property and subdivision located thereon;

NOW, THEREFORE, in consideration of the foregoing premises and mutual agreements the parties hereby agree as follows:

1. The stormwater management/BMP facilities and conveyances shall be constructed, operated, and maintained by the Landowner, its successors and assigns in accordance with the plans and specifications identified in the Plan, as well as in accordance with State and Federal law, the City’s Stormwater Management and Design Manual, and any and all applicable City ordinances.

2. The Landowner, its successors and assigns, including any homeowners association, shall adequately maintain the stormwater facilities and improvements on the Property. Adequate Maintenance required by the agreement shall include, but is not limited to, scheduled and corrective maintenance of all facilities and improvements intended to manage and/or control stormwater on the Property, with such facilities and improvements to expressly include, but not be limited to pipes, channels, structures, vegetation, berms, outlet structures, pond areas, access roads, or any other improvement relating to stormwater (the “Stormwater Facilities and Improvements”). Adequate maintenance is herein defined as keeping such Stormwater Facilities and Improvements in good working condition such that they satisfactorily perform their intended design functions and complying with attached maintenance procedures and schedules (Attachment ‘A’)

3. The Landowner, its successors and assigns, shall inspect and maintain the Stormwater Facilities and Improvements a minimum of once per year and more often as required by Attachment ‘A’, and keep records of the inspection, repair, maintenance and any modifications to the facilities and shall retain these records for a minimum of five (5) years. Inspections shall be made utilizing the forms in Attachment ‘B’. BMPs shall be inspected after each Water Quality Storm Event, which is a storm with rainfall greater than or equal to 1.3 inches. These records shall be made available to the City’s Public Works Director or his/her designee, as determined by the City Council, hereinafter called the “Director”, during inspection of the facility or at any time upon request. The purpose of the inspection is to assure safe and proper functioning of the Stormwater Facilities and Improvements located on the Property. Each annual inspection shall include a full and complete inspection of all Stormwater Facilities and Improvements located on the Property. Any and all deficiencies identified during
such inspection shall be noted in the inspection report. The inspection report shall also include a detailed plan for any and all repairs to the Stormwater Facilities and Improvements necessary to correct any deficiencies identified during the inspection, with the repair plan to be prepared by a professional engineer, or some other duly qualified professional, licensed in the State of Missouri and approved by the Director.

4. The Landowner, its successors and assigns, will cooperate with the City, its authorized agents and assigns, in ensuring the adequate long-term maintenance of stormwater facilities which are the subject of this Agreement. Landowner, its successors and assigns, will respond in a timely fashion to requests from City for documentation of the maintenance activities undertaken by Landowner in furtherance of this Agreement.

5. In the event the Landowner, its successors and assigns, fails to maintain the Stormwater Facilities and Improvements on the Property in good working condition acceptable to the City, and fails to make repairs as specified in the inspection report within a reasonable time frame as established by the City, with such time frame not to be shorter than thirty (30) days, the City, with permission of the Landowner (except in situations of eminent threat to public safety or infrastructure or to private property owned by other than the Landowner), may enter upon the Property and take any and all action necessary to correct the deficiencies identified in the inspection report. The Landowner, its successors and assigns shall be responsible for any and all fees and expenses incurred by the City in taking such corrective action. This provision shall not be construed to allow the City to erect any structure of a permanent nature on the land of the Landowner outside the easement for the stormwater management/BMP facilities. It is expressly understood and agreed that this agreement imposes no obligation or responsibility on the City to routinely maintain or repair any Stormwater Facilities and Improvements located on the Property.

6. The Landowner, its successors and assigns, will perform all work necessary to keep the Stormwater Facilities and Improvements in good working condition as required by the approved Plan as well as by State and Federal law, the City Stormwater Ordinance and Design Manual, and any and all applicable City ordinances.

7. In the event that the City performs or undertakes work of any kind pursuant to this agreement or expends any funds or resources in the performance of said work for labor, use of equipment, supplies, material, and the like, the Director shall certify the cost of the abatement. The cost shall include administrative costs as well as the actual cost of abating the nuisance. The Director shall cause a bill to be sent to the responsible party, which shall be due and payable within ten (10) days of receipt. The itemized statements in the bill shall be prima facie evidence of the recitals therein and of its validity. No clerical error or informality in the bill or in the proceedings leading up to the issuance of the bill shall be a defense in an action to collect the bill. Bills issued under this section, if not paid when due shall bear interest at the rate of nine (9) percent per annum. The bill shall constitute a personal obligation of the Landowner, its successors and assigns and of any other person who caused the nuisance, as well as a lien on the real estate. If the bill is placed in the hands of an attorney to collect the same, the Landowner, its successors and assigns, and/or any
other person causing the nuisance, shall be responsible for all costs of collection, including a reasonable attorney’s fee.

8. This agreement shall impose no liability on the City with respect to the maintenance or repair of any Stormwater Facilities and Improvements on the Property, nor does the City assume any obligation or duty to undertake or perform any action allowed for, or permitted by, this Agreement. The Landowner, its successors and assigns, further agrees to indemnify and hold the City harmless from any liability arising out of the management operation, maintenance or failure of any Stormwater Facilities and Improvement subject to this Agreement.

9. Notwithstanding any right extended to the City pursuant to this Agreement, it is expressly recognized and acknowledged that the City retains all prosecutorial rights and remedies available to it, including the enforcement of any and all applicable City ordinances, against the Landowner, its successors and assigns, relating to the operation, maintenance, and/or repair of Stormwater Facilities and Improvements located on the Property.

10. This Agreement shall be recorded among the land records of Clay County, Missouri, and shall constitute a covenant running with the land, and shall be binding on the Landowner, its administrators, executors, assigns, heirs and any other successors in interests including homeowners associations.

WITNESS the following signatures and seal

___________________________________________________________
Company/Corporation/Partnership Name

By: _______________________________________________________
Signature

___________________________________________________________
Type/Print Name and Title
STATE OF _____________________________

COUNTY OF __________________________

Corporation

On this __________ Day of ______________ in the year 20_______, before me, a Notary Public in and for said state, personally appeared, __________________________, who being by me duly sworn, acknowledged that they are the ________________ of ____________________________ and that said instrument was signed in behalf of said corporation and further acknowledged that they executed the same as a free act and deed for the purposes therein stated and that they have been granted the authority by said corporation to execute the same.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last written above.

_____________________________________

NOTARY PUBLIC

My Commission Expires: ______________
STATE OF ____________________________ )  
COUNTY OF __________________________ ) ss.

On this ____________ Day of _____________ in the year 20________, before me, a Notary Public in and for said state, personally appeared, ______________________________, who being by me duly sworn, acknowledged that she/he executed the same as a free act and deed for the purposes therein stated. The said __________________________________ further declares herself/himself to be single and unmarried.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last written above.

______________________________
NOTARY PUBLIC

My Commission Expires: ____________
STATE OF ____________________________

COUNTY OF ____________________________

Husband and Wife

On this _________ Day of _________________ in the year 20________, before me, a Notary Public in and for said state, personally appeared, ____________________________, husband and wife, who being by me duly sworn, acknowledged that they executed the same as a free act and deed for the purposes therein stated.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last written above.

______________________________

NOTARY PUBLIC

My Commission Expires: ____________________
STATE OF ____________________________ )
COUNTY OF __________________________) ss.

On this __________ Day of ______________ in the year 20________, before me, a Notary Public in and for said state, personally appeared, ____________________________, who being by me duly sworn, acknowledged that they are member(s) of __________________________, a limited liability company, and that said instrument was signed in behalf of said company and further acknowledged that they executed the same as a free act and deed for the purposes therein stated and that they have been granted the authority by said limited liability company to execute the same.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last written above.

__________________________________________

__________________________________________

NOTARY PUBLIC

My Commission Expires: ______________
STATE OF __________________________ )

COUNTY OF __________________________ ) ss.

On this __________ Day of ______________ in the year 20________, before me, a Notary Public in and for said state, personally appeared, ____________________________, Partnership who being by me duly sworn acknowledged that they executed the same as a free act and deed for the purposes therein stated and that they have been granted the authority by said partnership to execute the same.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year last written above.

______________________________

NOTARY PUBLIC

My Commission Expires: ________________
Attachment A
Required Inspection and Maintenance Schedule, and Maintenance Procedures
Attachment B
Inspection Forms
Appendix D – Post-Construction BMP Inspection Policy and Procedure
**Inspection Plan for Post Construction Best Management Practices (BMPs)**

City staff will inspect all post-construction BMPs at least biannually (no less than twice per permit cycle). The inspectors will complete an inspection form and take sufficient photographs to document the inspection. The details of the items to be inspected will vary based on the type of BMP. The following details the type of information that may be collected during each inspection in addition to any other information as indicated within a design specific BMP Maintenance Agreement with City (recorded at the County and on file with Public Works).

*Detention/Retention Basins:*

The majority of the existing post-construction BMPs in the City of Excelsior Springs are dry or wet detention basins. The inspection form used for basins is attached to this plan. Each basin will be inspected for the presence of trash and/or debris and any signs of decreased functionality. The perimeter will be reviewed for areas of bare soil or erosive gullies. The inlet device (pipe or swale) will be inspected for any clogging or structural deterioration (cracked/separated pipe or erosion in the swale). The forebay will be inspected for sediment accumulation, erosion, displaced energy dissipation, and invasive vegetation.

Dry basins will be inspected for sediment accumulation, standing water, and invasive vegetation. Wet basins will additionally be inspected for algal growth or invasive vegetation on the water surface. The embankment will be inspected for the presence of trees or shrubs, unhealthy grass cover or erosion, signs of seepage on the downstream face, evidence of burrowing animal activity, or other signs of potential failure. The outlet device will be inspected for clogging, damage, debris on the trash rack or other deterioration. The receiving water will be reviewed for erosion or other signs of damage near the outlet. The inspector may make other notes related to any access, signage, or vandalism issues.

*Bioretention/Rain Gardens:*

Each bioretention or rain garden facility will be inspected for the presence of trash and/or debris and any signs of decreased functionality. Preferably, these facilities will be inspected following a rain event to ensure that suitable infiltration is occurring.

Alternatively, water may be artificially introduced to the facility to check infiltrative capacity. The perimeter will be reviewed for areas of bare soil or erosive gullies. The inlet device (pipe, stone verge or swale) will be inspected for any clogging or structural deterioration (cracked/separated pipe, erosion in the swale, or stone verge clogged/covered with sediment).

The pretreatment area will be inspected for sediment accumulation, erosion/gully formation, invasive vegetation and the bypassing of flow. The bioretention/rain garden cell will be inspected for overall plant health (including signs of dead, diseased or dying plant material). The mulch in and around the cell will be inspected for indications that
the mulch is breaking down or floating away. The soil in the cell will be inspected to ensure that it is not clogged with sediment. As applicable and possible, the underdrain system will be inspected to ensure that it has not clogged. If the cell contains a drop inlet for overflow, the inlet will be inspected for clogging, damage and debris. The receiving water will be reviewed for erosion or other signs of damage near the outlet. The inspector may make other notes related to any access, signage, or vandalism issues.

*Grassed Swales/Filter Strips:*

Each grassed swale or filter strip intended to provide water quality treatment will be inspected for the presence of trash and/or debris and any signs of decreased functionality. If a flow splitter device is in place, it will be inspected for clogging or other signs of damage. The swale and any bypass channel will be inspected for clogging, erosion, gullies, excessive trees or shrubs, turf reinforcement damage, sediment accumulation, and invasive vegetation. The plants will be review to note any that are dead, diseased or dying. The receiving water will be reviewed for erosion or other signs of damage near the outlet. The inspector may make other notes related to any access, signage, or vandalism issues.

*Infiltration Trench/Basin:*

Each infiltration trench or basin will be inspected for the presence of trash and/or debris and any signs of decreased functionality. Preferably, these facilities will be inspected following a rain event to ensure that suitable infiltration is occurring. Alternatively, water may be artificially introduced to the facility to check infiltrative capacity. The perimeter will be reviewed for areas of bare soil or erosive gullies. The inlet device (pipe or swale) will be inspected for any clogging or structural deterioration (cracked/separated pipe or erosion in the swale).

The forebay will be inspected for sediment accumulation, erosion/gully formation, and invasive vegetation. The main treatment area will be inspected for sediment accumulation, standing water, and invasive vegetation. The outlet device will be inspected for clogging, damage or debris on the trash rack. The receiving water will be reviewed for erosion or other signs of damage near the outlet. The inspector may make other notes related to any access, signage, or vandalism issues.

*Permeable Pavement:*

The perimeter of each installation of permeable pavement (asphalt, concrete, pavers, etc.) will be inspected for bare soil/erosive gullies and suitable vegetation. The surface will be inspected for rutting/uneven settlement, the presence of trash or debris, weed growth, sediment present on the surface, pavement deterioration or damage, and infiltration capacity. Preferably, these facilities will be inspected following a rain event to ensure that suitable infiltration is occurring. Alternatively, water may be artificially introduced to the facility to check infiltrative capacity. The inspector may make other notes related to any access, signage, or vandalism issues.
Rainwater Harvesting:

Rainwater harvesting systems will be reviewed to determine if the system has any component that is damaged or leaking. If possible, the overflow during a rain event will be reviewed to determine if this is occurring at less than the design storm. The captured roof area will be inspected for the presence excess debris or sediment. If the harvesting facility is utilizing a pump, it will be inspected to ensure it is in working order. The overflow pipe will be inspected to determine if there is any damage or clogging and for erosion at the discharge point. The cistern will be inspected for sediment accumulation, algae growth, and mosquitoes. The screens and filters will be inspected for debris or sediment accumulation or any other clogging. The inspector may make other notes related to any access, signage, or vandalism issues.

Sand Filter:

Sand filters will be inspected for the presence of trash or debris. Adjacent pavement (if applicable) will be inspected for sediment present on the pavement surface. The perimeter of the sand filter will be inspected for bare soil and erosive gullies and the presence of suitable vegetation. The flow diversion structure (if applicable) will be inspected for any clogging or damage. The forebay or pretreatment area will be inspected for sediment accumulation, erosion and weeds. The filter bed and underdrain collection system will be inspected for ponding water more than 24 hours after a storm event. The outlet device will be inspected for clogging or damage. The receiving water will be reviewed for erosion or other signs of damage near the outlet. The inspector may make other notes related to any access, signage, or vandalism issues.

Wetlands:

Wetlands will be inspected for the presence of trash or debris. The perimeter will be reviewed for areas of bare soil or erosive gullies and the presence of suitable vegetation. The inlet device (pipe, stone verge or swale) will be inspected for any clogging or structural deterioration (cracked/separated pipe, erosion in the swale, or stone verge clogged/covered with sediment). The forebay will be inspected for sediment accumulation, erosion, and invasive vegetation.

Deep pool, shallow water and shallow land areas will be inspected for algal growth, invasive vegetation, shallow land flooded for more than five days after a storm, pruning needed for optimal plant health, sediment accumulation. These areas will also be inspected for overall plant health (including signs of dead, diseased or dying plant material). The embankment will be inspected for the presence of trees or shrubs, unhealthy grass cover or erosion, evidence of burrowing animal activity, or other signs of potential failure.
The micropools will be inspected for sediment accumulation. The outlet device will be inspected for clogging, damage, debris on the trash rack or other deterioration. The receiving water will be reviewed for erosion or other signs of damage near the outlet. The inspector may make other notes related to any access, signage, or vandalism issues.

Underground Detention:

Underground detention facilities will be inspected for the accumulation of trash or debris. The inlet device will be inspected for clogging or other damage. The underground vault or pipes will be inspected for sediment accumulation; seepage or settlement by cracking; joint alignment, elongation, or cracks; leakage or water surface infiltration into the system, surface wear or loss of protective coating or corrosion; and blockage.

The outlet device will be inspected for clogging or damage. The receiving water will be reviewed for erosion or other signs of damage near the outlet. The inspector may make other notes related to any access, signage, or vandalism issues.

Proprietary BMPs:

Proprietary BMPs will be inspected according to manufacturer’s recommendations. Alternatively, inspection reports received from the manufacturer’s representatives that include all relevant inspection data (including photographs) will be acceptable in lieu of the City’s inspection.
City of Excelsior Springs Public Works Department

Storm Water Basin Annual Inspection Form

If you have any questions regarding this form, please call the City of Excelsior Springs Public Works Department at (816) 630-0755.

Basin Address and Location: ________________________________

Owner Name: ___________________________ Owner Contact Numbers: ___________________________

Owner Address: ______________________________________ Owner E-mail: ________________________

Maintainer (Typically owner) Name: ___________________________ Maintainer Contact Numbers: ___________________________

Maintainer Address: ______________________________________ Maintainer E-mail: ________________________

Basin Type (circle): Dry Detention, Wet Detention, Storm Water Wetland, Rain Garden/Bioretention, other: ____________________________

Inspection Date: ___________________________ Submittal Date: ___________________________

ANNUAL INSPECTION ITEMS

Circle “Yes” or “No” for all items below

A. HAS DEBRIS OR TRASH ACCUMULATED? ................................................................. YES NO

COMMENT: _______________________________________________________________________

CORRECTIVE MEASURE: _______________________________________________________________________

B. HAS SEDIMENT ACCUMULATED? ................................................................. YES NO

COMMENT: _______________________________________________________________________

CORRECTIVE MEASURE: _______________________________________________________________________

C. ARE NOXIOUS WEEDS PRESENT THAT PREVENT THE DESIRED VEGETATION GROWING PROPERLY? ................................................................. YES NO

COMMENT: _______________________________________________________________________

CORRECTIVE MEASURE: _______________________________________________________________________

D. IS THERE EXPOSED SOIL NOT COVERED WITH VEGETATION, MULCH, OR OTHER NONERODABLE MATERIAL? ................................................................. YES NO

COMMENT: _______________________________________________________________________

CORRECTIVE MEASURE: _______________________________________________________________________

E. IS SOIL EROSION PRESENT ALONG STANDING OR MOVING SURFACE WATER? .............. YES NO

COMMENT: _______________________________________________________________________

CORRECTIVE MEASURE: _______________________________________________________________________


F. IS SOIL EROSION PRESENT AT BASIN SIDES, INLET, OR OUTLET? ..................................... YES NO
COMMENT:_________________________________________________________________________
CORRECTIVE MEASURE:__________________________________________________________________

G. ARE HOLES PRESENT FROM ANIMALS OR IS THERE UNDESIRABLE SOIL LOSS? ............... YES NO
COMMENT:_________________________________________________________________________
CORRECTIVE MEASURE:__________________________________________________________________

H. IS ALGAE OR STAGNANT MOISTURE PRESENT? .............................................................. YES NO
COMMENT:_________________________________________________________________________
CORRECTIVE MEASURE:__________________________________________________________________

I. ARE UNPLEASANT ODORS EMERGING? ................................................................. YES NO
COMMENT:_________________________________________________________________________
CORRECTIVE MEASURE:__________________________________________________________________

J. ARE WET OR SOGGY AREAS PRESENT THAT PREVENT DESIRED VEGETATION FROM GROWING? ................................................................. YES NO
COMMENT:_________________________________________________________________________
CORRECTIVE MEASURE:__________________________________________________________________

K. IS RUNOFF ENTERING OR LEAVING THE BASIN IN A MANNER THAT PREVENTS PROPER FUNCTION OF ITS INFLOW OR OUTFLOW SYSTEMS? .............................................. YES NO
COMMENT:_________________________________________________________________________
CORRECTIVE MEASURE:__________________________________________________________________

L. DOES FLOW OUT OF BASIN OCCUR IN A MANNER THAT CREATES EROSION OR DAMAGE TO ADJACENT PROPERTY
COMMENT:_________________________________________________________________________
CORRECTIVE MEASURE:__________________________________________________________________

M. ARE THE BASIN FUNCTIONS IMPAIRED? ................................................................. YES NO
COMMENT:_________________________________________________________________________
CORRECTIVE MEASURE:__________________________________________________________________

N. OTHER ITEMS AND COMMENTS: ______________________________________________________

(ATTACH ADDITIONAL PAGES IF NEEDED TO PROPERLY DOCUMENT INSPECTION)

THE INFORMATION PROVIDED IS AN ACCURATE AND CURRENT DESCRIPTION OF THE BASIN AT THIS ADDRESS:

________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________
________________________________________________________________________________________

INSPECTORS SIGNATURE          DATE          LAND OR BUSINESS OWNER SIGNATURE
Appendix E – Employee Training Policy and Procedure
Procedures for Employee Training Program

Purpose:

The purpose of this document is to record the procedures for training municipal employees with regards to the Municipal Separate Storm Sewer System (MS4) permit and relate these procedures to the minimum control measures for public education and illicit discharge detection and elimination. These procedures will be detailed based on the periodic nature of the training and the types of employees to be trained.

Initial Training:

The initial training was supplied to all existing City employees prior to June 2013. All employees hired after this date will be provided this training as part of their new employee orientation. This initial training will include a brief overview of the MS4 permit including a background of clean water law and an explanation of what the City of Excelsior Springs’s requirements are under their MS4 permit specifically as it relates to each minimum control measure (MCM). This will include information about reporting illicit discharges. Employees will receive this training through one of the following mechanisms:

- In person training
- Watch video or webinar
- View powerpoint
- Read a summary document

Following the introductory training, each employee will sign that they have received the training.

Ongoing Public Education of Staff:

Because the City staff is part of the City’s “public” audience, additional education will be supplied related to general pollution prevention topics as they are to all residents of Excelsior Springs and the Kansas City metro area. Staff will be educated with brochures available from the Mid-America Regional Council (MARC) Water Quality program. These will be readily available in multiple locations including City Hall. Additional resources are available to staff through the City web site and through links to the MARC web site.

Training Related to Specific Standard Operating Procedures:

The City is in the process of finalizing a set of standard operating procedures as they related to Good Housekeeping in Municipal Operations. Many of these SOPs directly relate to preventing illicit discharges to the MS4. These standard operating procedures include:

- Good Housekeeping
- Building Maintenance
- Garbage Handling and Storage
• Landscape Management
• Mowing and Irrigation
• Weed and Pest Control
• Fertilizer and Pesticide Storage and Disposal
• Erosion and Sediment Control
• Painting
• Vehicle and Equipment Storage
• Vehicle and Equipment Washing
• Vehicle and Equipment Fueling
• Petroleum and Chemical Storage, Handling and Disposal
• Spill Prevention and Control
• Vactor Truck Waste Handling and Storage
• Parts Cleaning and Storage
• Illicit Discharge Detection and Elimination
• Storm Sewer System/Catch Basin/Outfall Repair
• Catch Basin (Inlet) Cleaning
• Sand and Salt Storage and Application
• Street Sweeping

The City of Excelsior Springs has ten departments. These are:
• Administration
• Finance
• Human Resources
• Fire and EMS
• Police
• Planning and Development
• Parks and Recreation
• Golf
• Public Works
• Community Center

Each department of the City of Excelsior Springs has been reviewed to determine the applicability of each of the SOPs to the duties carried out by their employees. Administration, Community Center, Finance and Human Resources will have few employees that directly impact water quality in their day-to-day activities. The employees of these departments will not receive training on any of the SOPs. Only janitorial and building maintenance staff and/or contractors providing this work will be expected to review the SOPs related to building maintenance, garbage handling, spill prevention and good housekeeping.

Fire and EMS as well as Police Department employees will be provided training as it relates to illicit discharge detection and elimination; vehicle and equipment storage, washing and fueling; petroleum and chemical storage, handling and disposal; and spill prevention and control.
Planning and development will be provided training on to illicit discharge detection and elimination; vehicle and equipment storage, washing and fueling; petroleum and chemical storage, handling and disposal; erosion and sediment control and spill prevention and control. Employees performing plan review and inspections will be given task specific training related to these items.

All employees in Public Works, Parks and Recreation, and Golf (except those only performing administrative) will be trained on each of the SOPs.

All SOPs will be available for employees to review on-site. Additional training on the individual SOPs will be completed quarterly as brief additions to existing staff meetings. Supervisory personnel who have been trained on the SOPs by the Stormwater Coordinator or the City’s stormwater consultant will conduct these trainings.

Specialized Training:

Employees performing inspections of construction or post-construction runoff control best management practices (BMPs) will be trained by the Stormwater Coordinator or the City’s stormwater consultant. These employees will be encouraged to attend additional training from outside sources such as the International Erosion Control Association (IECA), Mid-America Regional Council (MARC), Missouri Floodplain and Stormwater Manager’s Association (MFSMA) or similar opportunities as they may arise. Personnel involved in illicit discharge detection through dry weather field screening will be similarly trained. Each employee with these duties will receive task specific training at least once per permit cycle.

Training Program Review:

At the end of each reporting cycle, the Stormwater Coordinator will review the number of employees who have received training and report it in their biennial report.
Appendix F – Municipal Operations List
List of Municipal Operations Relevant to the MS4 Program

The City of Excelsior Springs’s municipal operations as they relate to the MS4 permit and program include the management and maintenance of:

- Parks and Open Space
- Other Municipally-Owned Recreational Facilities
- Roads and Streets
- Municipal Fleet (Vehicles and Equipment)
- Vehicle and Equipment Yards
- Municipal Buildings
- Municipal Parking Lots
- Storm Sewer System
- Salt/Sand Storage Areas
- Solid Waste Collection (by contract)
- Wastewater Collection and Treatment
- Potable Water Treatment and Distribution

Additionally, any construction or land disturbance undertaken by City crews or by contractors to the City would be considered “municipal operations”.

Details related to each of these municipal operations broken down by department are provided herein.

Parks Department:

The Parks Department manages most municipal operations related to the MS4 permit as they apply to Parks and Open Space. This staff consists of one foreman, three full-time maintenance workers and seasonal assistance as necessary. The Parks department is responsible for: mowing park land; building maintenance on all park facilities; cleaning and maintaining the following amenities: skate park, tennis courts, restrooms, shelters, trails, playgrounds, ball fields, park grounds, snow removal, maintenance on equipment, and the removal or trimming of trees within the parks. The park inventory map is attached at the end of this document. Below are more details related to these municipal operations.

Mowing - Staff mows and trims approximately 200 acres of park land. Seasonal employees mow and maintain the frontline areas on a weekly basis April - October. Staff spends approximately 160 man-hours mowing each week in season.

Building Maintenance – Staff is responsible for maintaining park building facilities. These facilities include 10 shelters, 3 outdoor restroom facilities, an office, and maintenance buildings located within the park system. One employee maintains the shelters and restrooms daily, while other building facilities are inspected once a month and repaired.
**Skate Park and Playgrounds** - The city operates and maintains a skate park and 7 playgrounds.

**Ball fields** - Staff maintains 7 athletic fields for recreation league participants and the general public. The Excelsior Springs Parks Department and Excelsior Springs Public School District work together to maintain three baseball fields and one soccer field. The Parks department performs mowing and other game preparation tasks. Such tasks include: mowing game fields, seeding, fertilizing, aerating, field marking, and grooming of the infield surfaces.

**Park Cleanliness** – Two employees are designated to maintain the cleanliness of 7 park areas. This employee cleans all restroom facilities and shelter houses, and inspects park amenities. Each park area is patrolled for loose litter and all trash barrels are emptied.

**Snow Removal** - The Parks Department provides snow removal in coordination with the Public Works Department for the parking lots and trails within the Parks system.

**Equipment and Vehicle Maintenance** - The Parks Department has implemented a preventative maintenance program for all vehicles and equipment to ensure long-term use and efficiency. Park employees inspect, check fluid levels, and grease equipment regularly. Records are maintained on equipment repairs and hours or mileage of use to make sure maintenance needs are performed within the recommended maintenance interval. Staff maintains 4 passenger vehicles, 2 tractors and 8 mowers along with other pieces of equipment.

**Tennis Courts** – The City of Excelsior Springs maintains one tennis court. Located on S. Marietta near Skate Park.

**Landscaping** - Staff sustains landscaping operations among 7 parks and some of the city buildings. These operations include trimming, planting, mulching, weeding, designing and installing landscape beds.

**Parks Trees** – The Parks Department maintains all trees in 7 different park areas. This includes more than 200 acres of park land.

**Golf Course:**

The Golf Course manages municipal operations related to the MS4 permit as they apply to the Golf Course. This staff consists of one foreman, three full-time maintenance workers and seasonal assistance as necessary. The Golf Course department is responsible for: mowing; building maintenance on all Golf Course facilities; cleaning and maintaining the following amenities: clubhouse, maintenance shop, and 2 restrooms located on course. Golf Course maintains grounds, snow removal, maintenance on equipment, and the removal or trimming of trees within the course. The course map is
attached at the end of this document. The Course mows over 150 acres, and use over 150
man hours each week during the mow season. The fleet of two tractors and 10 different
types of mowers along with 5 other types of equipment are maintained by the Golf
Course.

Public Works:

Roads and Streets – The Public Works Department maintains 117 miles of City streets.
This maintenance consists of traffic striping; installing and/or replacing street signs; curb,
gutter and sidewalk maintenance; street sweeping; snow removal; mowing of right-of
ways; drainage system maintenance; and pavement maintenance/repairs.

Street Trees and Cemetery Maintenance – The Public Works Department performs
necessary maintenance for trees within the street right-of-way and within easements as
necessary. Additionally, Public Works staff mows and trims the vegetation in the city
cemetery.

Municipal Fleet (Vehicles and Equipment) – The Public Works Department maintains
22 passenger vehicles and 53 pieces of equipment. This maintenance consists of
maintenance only. Major work is contracted through various equipment and vehicle
manufacturers. The equipment or vehicle is taken to the contractor's shop or the
maintenance is performed at the City’s maintenance facility with the old fluids and parts
hauled away by contractors.

Vehicle and Equipment Yards – The Public Works Department operates one vehicle and
equipment yard located at 103 E. Water St., Excelsior Springs, MO. This facility consists
of 4 buildings, 4 pole barns, and a salt shed. This facility is inspected quarterly with
respect to safety concerns and insurance protocol. Storm water pollution potential is
inspected at the same time.

Municipal Parking Lots – The Public Works Department maintains 3 municipal parking
lots. Most lots are cleaned at least four times annually. Other maintenance is performed
on an as-needed basis inclusive of crack sealing or other sealing operations. Staff also
assists the Parks Department by sweeping their parking lots on an as-needed basis.

Storm Sewer System – The City of Excelsior Springs contains approximately 100 miles
of storm sewer pipe and approximately 550 catch basins/inlets. A portion is private and
maintained by the property owners. Those in the public right-of-way and easement are
maintained by Public Works staff. This maintenance includes clearing any clogged pipes
or catch basins/inlets and minor replacements/repairs.

Salt/Sand Storage Areas – The Public Works Department maintains a salt/sand storage
area at the Public Works maintenance facility located at 103 E. Water St., Excelsior
Springs, MO. This area is inspected quarterly along with the rest of the facility.
Standard operating procedures also dictate frequent inspections and cleaning of the area
around the storage during snow response usage.
**Wastewater Collection and Treatment** – The Public Works Utilities Division maintains approximately 141 miles of sanitary sewers and 8 pumping stations. This maintenance includes inspection, repair, cleaning and preventative maintenance of the sanitary sewer mains and pump stations. This division also operates the wastewater treatment plant located at 103 E. Water St., Excelsior Springs, MO.

**Potable Water Treatment and Distribution** – The City operates the drinking water treatment plant located at 103 E. Water St., Excelsior Springs, MO through the Public Works Utility Division. The water treatment system includes the Water Treatment plant, a series of 6 water production wells, and 4 elevated water storage towers. The water treatment plant uses various chemicals for treatment of water and stores quantities of such chemicals on site.

The Public Works Utility Division maintains approximately 275 miles of water lines throughout Excelsior Springs. This maintenance includes inspection and repair of the water mains, valves and fire hydrants.

**Solid Waste Collection (by contract)** – The City entered into a multi-year solid waste and recycling contract on Oct. 2010 with Allied Waste for the collection of curbside solid waste and recycling. Part of the service includes the provision of providing each resident an enclosed container with a lid for both solid waste and recycling. This process is intended to contain curbside disposal and prevent leakage and blowing of refuse when collected. The contract also has provisions requiring the contractor to comply with all local, state and federal ordinances and laws, which includes those related to storm water quality. The contract also includes requirements for the contractor to retrieve any items that have fallen from the vehicle in collection and to keep all vehicles leak free and in proper working order. There is a damage clause in the contract for fines to the contractor associated with three or more incidents of violations of the above.
Appendix G – Standard Operating Procedures (SOPs) for Good Housekeeping in Municipal Operations
Building Maintenance SOP

What

Building Maintenance is an operational best management practice (BMP) developed to control the maintenance and construction activities that take place at City buildings and their surrounding grounds with procedures to mitigate the contaminated debris, trash, and potential chemicals from reaching our stormwater system.

These procedures are simple steps that must be included in everyday work activities to protect stormwater from contact with pollutants and are a joint responsibility of everyone in the work place conducting maintenance on buildings.

Who

All employees or contractors who conduct maintenance on City buildings, including painting, window washing, sidewalk cleaning, janitorial services, etc.

Why

To protect stormwater from pollution by reducing or eliminating pollutant load sources related to building maintenance activities.

How

**DO**

- Remove trash and debris around building and grounds daily or as needed.
- Place temporary inlet protection at stormwater inlets to catch contaminants and wash water from maintenance activities.
- Have spill cleanup materials available and ready to go during painting activities or any activity that has chemicals standing by for use.
- Clean up paint or other spills promptly, with DRY methods if possible.
- Oversee contractors to ensure that correct procedures are followed and contaminants are kept to a minimum and contained.
- Ask the contractor for a list of chemicals they will be bringing on site for the maintenance work and how they will control, contain and dispose of the unused portion of the chemicals and other materials.
- Expect contractors to follow proper cleanup procedures; monitor progress.
- Keep maintenance equipment clean; do not allow a build up of wastes.
- Maintain a record of contractor work and if any spills/problems occurred.

**DON'T**

- DO NOT let trash and waste accumulate in or around the building.
- DO NOT transfer, pour, or dispose of maintenance materials outdoors in parking lots, near or in storm drains, drainage ditches, on the ground, or any other location where they can run off into the storm drainage system.
- DO NOT let maintenance wash water, chemicals, paint, or any other maintenance residue enter the storm drain system.
- DO NOT handle containers alone if awkward or require over-exertion on your part. Get help and spread the weight load.
- DO NOT repair maintenance equipment outside; use a covered, designated area for such repairs.
- DO NOT hose down debris collected from sidewalk cleaning; use dry sweeping method and dispose properly in trash.
- DO NOT let contractors conduct maintenance in conflict with proper procedures for the work; monitor closely.
Catch Basin (Inlet) Cleaning SOP

**What**
Catch basin (inlet) cleaning is an operational best management practice (BMP) developed to control the maintenance activities that take place throughout the City's municipal separate storm sewer system with procedures to mitigate the contaminated debris, trash, and potential illicit discharges from reaching our waterways. Catch basin cleaning may include cleaning grates, structure interiors and portions of pipes near structures.

**Who**
All employees who conduct catch basin cleaning (Primarily Street maintenance and Parks personnel).

**Why**
To protect stormwater by maintaining the ability of the catch basins to trap sediments, organic matter and litter. This reduces clogging in the storm drain system as well as the transport of sediments and pollutants into receiving waterbodies.

**How**

<table>
<thead>
<tr>
<th>DO</th>
<th>DON'T</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Inspect catch basins for structural integrity and evidence of illicit discharges during cleaning.</td>
<td>- DO NOT dump any litter, debris, fluids or sediment into catch basins.</td>
</tr>
<tr>
<td>- Notify Public Works Director of needed repairs.</td>
<td></td>
</tr>
<tr>
<td>- Notify your supervisor to report illicit discharges. Supervisors report illicit discharges to Stormwater Coordinator or Public Works Director.</td>
<td></td>
</tr>
<tr>
<td>- Dispose of catch basin residues properly.</td>
<td></td>
</tr>
<tr>
<td>- Perform street sweeping to reduce the amount of sediment, debris and organic matter entering catch basins, which in turn reduces the frequency they will need to be cleaned.</td>
<td></td>
</tr>
<tr>
<td>- Discharge fluids collected during catch basin cleaning to the designated area.</td>
<td></td>
</tr>
<tr>
<td>- Track inlets inspected and cleaned.</td>
<td></td>
</tr>
</tbody>
</table>
# Standard Operating Procedures for Water Quality Protection

## Catch Basin/Storm Drain System/Outfall Repair SOP

### What

Catch basin repair may include replacing lids, access covers, patching cracks, fixing inverts or fixing pipe connections. Storm drain system repairs may include repairs to the pipe network, structures, and open channels. Outfall repairs may include repair of erosion caused by poor energy dissipation, repair of erosion protection or other appurtenances associated with the discharge of the storm drainage system to a natural waterway.

### Who

All employees who conduct catch basin, storm drain system or outfall repair (Street Maintenance).

### Why

To protect stormwater by inspecting, testing, and replacing or repairing storm drainage facilities on a regular basis to prevent a failure of stormwater system.

### How

**DO**
- Practice preventive maintenance and inspect on a regular schedule for cracks, leaks, and other conditions that could cause breakdowns in the system (this can be done during the cleaning process).
- Repair defective pipes or structures identified during an inspection as soon as possible.
- Create an inspection and cleaning schedule for the municipal storm sewer system including detention ponds, energy dissipators, and associated structures.
- Document inspections and repairs and maintain complete records.
- Dispose of or recycle repair waste to avoid environmental impacts.
- Use appropriate erosion and sediment control practices when performing repairs.

**DON'T**
- DO NOT allow defective pipes or structures to go unrepaired.
# Painting SOP

**What**
The maintenance and construction activities that take place at City buildings and other City facilities (including rights-of-way and parks). Painting includes painting of streets (striping, crosswalks, etc), painting of building interiors and exteriors and painting of outdoor facilities (such as park benches, sign posts, etc).

**Who**
All employees involved with painting – indoors or out – and includes employees supervising contractors doing this work.

**Why**
This SOP's primary goal is to protect stormwater by properly storing, using and disposing of paint and preparation materials.

## How

**DO**
- Store waste paints, solvent, and rags in covered containers.
- Properly clean, store, and dispose of paint and associated waste materials. Dispose of leftover paint by adding kitty litter to dry out and then dispose of in trash or send with other household hazardous waste.
- Whenever possible, only purchase the amount of paint needed for the job to reduce leftovers.
- Whenever possible, use up any leftover paint by adding a partial coat.
- Whenever possible, use less toxic paints such as latex or water-based paints.
- Whenever possible, use drop cloths under any painting or preparation activity such as scraping or sandblasting.
- Whenever possible, use techniques such as brushing and rolling to avoid overspray.
- Whenever possible, use vacuum sanders to collect paint dust.
- Whenever possible, perform abrasive blasting and spray painting in an enclosed or covered area that is safe for personnel.

**DON’T**
- DO NOT dispose of paint or waste paint products into the storm drain system, a waterbody, or onto the ground.
# Erosion and Sediment Control SOP

## What
Land disturbing activities that will require erosion and sediment control may include street, stormwater, sanitary sewer or water system repairs or replacements as well as other minor grading projects.

## Who
All employees who perform or inspect land disturbance activities. Consult with Stormwater Coordinator prior to any planned land disturbance activities and as soon as possible following emergency work. Foremen are responsible for the maintenance of erosion and sediment control devices on each of their projects.

## Why
To protect stormwater from pollution by reducing or eliminating pollutant loading from land disturbing activities.

## How

### DO
- Use erosion control techniques or devices to stabilize disturbed areas.
- Keep land disturbance to a minimum.
- Inspect and maintain erosion and sediment control devices weekly and after any rain event.
- Install erosion and sediment control devices properly. See APWA standard details.
- Install erosion control blankets when seeding steep slopes and drainage ways. Utilize the manufacturer's recommended staple pattern.
- Whenever possible, protect disturbed areas from stormwater runoff by using stabilizers such as mulch.
- Whenever possible, limit construction activities during months with higher runoff rates.
- Assign responsibility for maintaining erosion and sediment control devices.
- Reduce the velocity of stormwater runoff whenever possible through the use of ditch checks, slope breaks, diversion berms, etc.
- Whenever possible, divert clean water away from the disturbed area during construction activities.
- Protect vegetative buffers or create new ones.
- Stabilize soils by mulching and/or seeding as soon as possible after construction or prior to a long period period of inactivity.

### DON'T
- DO NOT divert runoff into a sensitive area such as a wetland.
Fertilizer and Pesticide Storage and Disposal SOP

**What**
Storage is the proper care and handling of fertilizer and pesticides to be used at a later time. Disposal is the appropriate method of discarding any materials that cannot be used at a later time.

**Who**
All employees who handle fertilizers and pesticides.

**Why**
To protect stormwater by properly storing and disposing of fertilizers and pesticides.

**How**

**DO**
- Store fertilizers and pesticides in high, dry locations, according to manufacturer's specifications.
- Cleanup spills and leaks of pesticides and fertilizers to prevent the chemicals from reaching the storm drain system.
- Clearly label secondary containers.
- Properly dispose of fertilizers and pesticides according to manufacturer's specifications.
- Regularly inspect fertilizer and pesticide storage areas for leaks or spills.
- Store pesticides in enclosed areas or in covered impervious containment, preferably in a locked cabinet.
- Order fertilizers and pesticides for delivery as close to time of use as possible to reduce amount stored at facility.
- Order only the amount needed to minimize excess or obsolete materials requiring storage and disposal.
- Use ALL herbicides or pesticides appropriately to minimize the amount of chemicals requiring disposal.
- Dispose of old, unusable or "obsolete" pesticides with household hazardous waste.

**DON'T**
- DO NOT dispose of fertilizers or pesticides in storm drains.
- DO NOT leave unlabeled or unstable chemicals in uncontrolled locations.
Garbage Handling and Storage SOP

**What**
Garbage handling and storage includes managing traditional office waste, waste collection from public trash receptacles and larger waste associated with operation and maintenance of public facilities (such as the piles of broken signs, manhole lids, etc at the maintenance building).

**Who**
All employees who handle or manage the storage of garbage.

**Why**
To protect stormwater from contamination by properly storing garbage. Garbage and leachate can be transported by stormwater and enter the storm drain system and receiving waterbodies.

<table>
<thead>
<tr>
<th><strong>How</strong></th>
<th><strong>DO</strong></th>
<th><strong>DON'T</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- Dispose of hazardous materials according to manufacturer's specifications.</td>
<td>- DO NOT place hazardous wastes in a dumpster or trash bin.</td>
<td></td>
</tr>
<tr>
<td>- Cover rubbish bins to keep rubbish and leachate in and wind and rain out.</td>
<td>- DO NOT wash down trash storage areas into the storm drainage system.</td>
<td></td>
</tr>
<tr>
<td>- Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>- Utilize properly-labeled recycling bins to reduce the amount of garbage disposed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Inspect garbage bins for leaks regularly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Whenever possible, use dumpsters without drain holes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Recycle scrap iron and steel on a regular basis. Place in scrap metal dumpster at recycle facility.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Empty public trash receptacles weekly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Combine to justify more frequent pickup.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Vector Truck Waste Handling and Storage SOP**

**What**
Vector truck waste control consists of operational BMPs developed to control pollutant discharges to the drainage system by promoting proper waste management and disposal procedures. Vector truck wastes have the potential to be highly contaminated and laden with fine sediment. These wastes may also include litter, debris, oil and grease. Wastes are typically wet to saturated and must be dried prior to separate disposal of solid and liquid waste. The procedures below are critical steps that must be followed every time Vector truck waste is disposed of.

**Who**
All employees who operate Vector trucks or manage Vector truck waste.

**Why**
To provide time-tested, generally accepted routine procedures that minimize the potential for release of pollutants during the performance of activities by the City.

**How**

<table>
<thead>
<tr>
<th><strong>DO</strong></th>
<th><strong>DON'T</strong></th>
</tr>
</thead>
</table>
| - Unload Vector truck waste into the appropriate Vector truck waste area only. If contaminated with sewage, discharge at the WWTP. Non-sewage contaminated waste should be discharged in dewatering area at Public Works.  
- Inspect the Vector truck waste area weekly to ensure containment of all wastes. Dispose of wastes monthly or as needed to avoid overflow. | - DO NOT empty Vector truck waste into non-designated areas. |
# Vehicle and Equipment Fueling SOP

**What**

Vehicle and equipment fueling includes fueling operations at maintenance facilities (Public Works, golf course, and airport) and commercial gas stations. It includes the proper handling and storage of fuels as well as the cleanup of any fueling spills.

**Who**

All employees who operate or are responsible for fueling vehicles and/or equipment.

**Why**

To prevent stormwater contamination originating from vehicle and equipment fueling.

**How**

<table>
<thead>
<tr>
<th><strong>DO</strong></th>
<th><strong>DON'T</strong></th>
</tr>
</thead>
</table>
| - Fuel carefully to minimize drips to the ground surface.  
- Maintain clean fuel dispensing areas using dry cleanup methods.  
- Utilize fueling safeguards. Clearly label and tag all valves to reduce human error.  
- Maintain fuel storage tanks.  
- Utilize absorbent spill cleanup kits and materials available at fueling areas.  
- Immediately clean up spills and properly dispose of contaminated soil and cleanup materials.  
- Regularly inspect fueling equipment and secondary containment for corrosion and structural failure, cracks in foundations, and physical damage to container systems.  
- Protect storm drains from fueling areas using berms and dikes.  
- Know the location of emergency shutoff mechanisms of fueling areas. | - DO NOT "Top off" fuel tanks.  
- DO NOT hose down a fuel spill.  
- DO NOT bury a fuel spill. |
# Parts Cleaning and Storage SOP

**What**

Procedures to prevent the discharge of contaminants during maintenance activities that take place on City vehicles and equipment.

**Who**

All employees involved in vehicle and equipment maintenance who clean and/or store parts.

**Why**

To protect stormwater by practicing proper parts cleaning techniques, disposing of waste cleaners properly and by properly storing spare parts. Improper storage of materials can result in pollutants and toxic materials entering ground and surface water supplies.

<table>
<thead>
<tr>
<th>How</th>
<th><strong>DO</strong></th>
<th><strong>DON'T</strong></th>
</tr>
</thead>
</table>
|     | - Perform all cleaning in a maintenance building to minimize the potential for spills.  
- Store waste cleaners in properly labeled containers.  
- Dispose of all waste cleaners properly with a licensed contractor.  
- The variety of cleaners should be minimized to make recycling and disposal simpler.  
- Use citrus-based cleaners and dispose of properly.  
- Use steam cleaning and pressure washing instead of solvents; however wastewater must be discharged to an oil/water separator and the waste water treatment plant notified.  
- Store spare parts in a maintenance building.  
- Use drip pans for any parts that are dripping.  
- Monitor storage areas for staining/leaks on a schedule decided on by the appropriate personnel.  
- Clean the majority of petroleum products from the parts that are to be stored. | - DO NOT dispose of spent cleaners down the floor drains, sinks, toilets, ditches, on the ground or in storm drain inlets. |
# Illicit Discharge Detection and Elimination SOP

**What**
An operational best management practice (BMP) developed to control the discharge of anything other than stormwater to the stormwater system (with a few federal exceptions).

**Who**
All employees.

**Why**
To prevent the discharge of pollutants to the stormwater conveyance system and quickly address any illicit discharges that are discovered to mitigate the impact of the pollutants.

**How**

<table>
<thead>
<tr>
<th>DO</th>
<th>DON'T</th>
</tr>
</thead>
</table>
| - Perform more frequent inspections on outfalls with suspected illicit discharges and/or high priority areas.  
- Characterize and record observations on basic sensory and physical indicators (e.g., odor, color, oil sheen).  
- Whenever possible, conduct inspections during dry weather periods.  
- If dry weather flow is present at the outfall, and the flow does not appear to be an obvious illicit discharge (e.g., flow is clear, odorless, etc.), attempt to identify the source of the flow (intermittent stream, etc.) then document the discharge for future comparison.  
- Whenever possible, televis the storm drain system to trace high priority, difficult to detect illicit discharges.  
- Suspend access to storm drain if an "imminent and substantial danger" exists.  
- If an obvious illicit discharge is encountered (such as raw sewage, paint, etc.), follow the procedure below.  
Procedures to follow if illicit discharge is detected:  
- Call supervisor.  
- Trace upstream to locate the source.  
- Tracing Procedures  
  - Flowing discharges – use visual tracing and/or dye testing.  
  - Non-flowing discharges – inspect storm drain access points for staining/residual evidence and/or use dye testing.  
- Take photos.  
- Estimate flow/collect samples if instructed to do so.  
- Complete Outfall Inspection Form to document observations.  
- Document any further action taken. | - DO NOT put yourself in danger.  
- DO NOT enter private property without permission. |
Landscape Management SOP

What
Landscape management includes the care of all vegetated areas on City property including right-of-ways, parks and areas around City buildings/facilities.

Who
All employees and contractors who perform landscape management activities.

Why
To protect stormwater managing landscaped and turf areas in ways that minimize polluted runoff by properly applying fertilizers and maintaining turf health to reduce diseases.

How

<table>
<thead>
<tr>
<th>DO</th>
<th>DON'T</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Design landscaping by taking into account soil types, light, drainage, desired maintenance level and budget.</td>
<td>- DO NOT develop a landscape design without assessing its impact on water quality.</td>
</tr>
<tr>
<td>- Apply fertilizers based on a soil testing program, soil type, turf function, and assessment by qualified personnel.</td>
<td>- DO NOT fertilize before a heavy rainfall.</td>
</tr>
<tr>
<td>- Use all fertilizers according to manufacturer's specifications and applicable regulations and industry standards.</td>
<td>- DO NOT apply phosphorus fertilizer on soil surface.</td>
</tr>
<tr>
<td>- Choose seed based on soil types, intended use of area, latest variety research, and assessment of past site performance.</td>
<td>- DO NOT deposit fertilizer in the water, onto the street or into storm drains.</td>
</tr>
<tr>
<td>- Apply fertilizers during periods of maximum plant uptake (usually fall and spring).</td>
<td>- DO NOT apply fertilizer to frozen ground.</td>
</tr>
<tr>
<td>- Calibrate application equipment to ensure proper application.</td>
<td>- DO NOT fertilize during a drought or when the soil is dry.</td>
</tr>
<tr>
<td>- If phosphorus fertilizer is used when re-seeding, mix phosphorus into root-zone.</td>
<td>- DO NOT use combined products such as weed and feed, which do not necessarily target specific problems at the appropriate time.</td>
</tr>
<tr>
<td>- Aerate grassed areas to improve drainage and bring more oxygen to the soil.</td>
<td></td>
</tr>
</tbody>
</table>
# Mowing and Irrigation SOP

**What**
Mowing includes the cutting of all vegetated (primarily turf) areas on all City property including rights-of-way, parks, golf course and areas around City buildings/facilities. Irrigation includes any watering necessary to sustain landscaped or special turf areas (such as golf course) on all City property including parks and areas around City buildings/facilities.

**Who**
All employees engaging in mowing activities (Streets, Parks and Golf) and responsible for irrigation.

**Why**
To protect stormwater by using proper mowing and watering techniques. Proper mowing and irrigation techniques will reduce organic matter and other pollutants from entering the storm drain system and waterbodies.

## How

**DO**
- Mow only as low as needed for the area’s intended use.
- Vary mowing pattern.
- Base irrigation amounts on monitoring for moisture content.
- Water at appropriate times (when no rain is forecasted).
- Manage leaves, clippings, compost so that runoff does not enter storm drain system or waterbodies.
- Keep mower blades sharpened to avoid damaging grass leaf tissue.
- Sweep or blow lawn clippings and debris of impervious surfaces instead of using water.
- Whenever possible, allow areas to go natural – mowing once or twice per year rather than every week.
- Whenever possible, mow when the grass is dry to prevent spread of turf diseases.
- Whenever possible, mulch grass clippings using a mulching mower.
- Whenever possible, fuel equipment in a controlled location.

**DON’T**
- DO NOT irrigate based on timers/schedules instead of monitoring for moisture content.
- DO NOT dump gas, wastes or contaminated water down storm drains, in open ditches or on the ground surface.
- DO NOT refuel or change the mower oil near storm drains or open ditches.
- DO NOT leave mower running in one location.
- DO NOT blow grass into street or ditches.
# Standard Operating Procedures for Water Quality Protection

## Petroleum and Chemical Storage, Handling and Disposal SOP

### What

Petroleum and Chemical Storage, Handling and Disposal is an operational best management practice (BMP) developed to control the maintenance and construction activities performed by and for the City with procedures to mitigate the potential discharge of petroleum products or other chemicals to our stormwater system.

### Who

All employees handling, storing or disposing of petroleum or chemical products.

### Why

To protect stormwater from petroleum and chemical products due to improper disposal and handling practices.

### How

**DO**
- Handle and dispose of petroleum/chemicals according to manufacturer’s specifications.
- Store waste petroleum/chemical products in a designated area.
- Label each waste container with its contents.
- Drain used oil filters for 24-hours before disposal (disposal in regular trash allowed).
- Inspect storage areas (both storage for unused and used materials) for staining/leaks on a regular basis.
- Minimize the number of solvents used to reduce the variety of waste generated and to make recycling easier. Use safer alternatives.
- Conduct oil changes indoors for equipment that fits indoors.
- Know where the Material Safety Data Sheets (MSDS) are located for all chemicals used. Use proper protective equipment.
- Assess hazardous material needs to minimize the amount and variety of hazardous material in storage.
- Transfer materials from one container to another indoors in a well ventilated area. Properly label containers.
- Store materials away from high traffic areas, posted with appropriate signage.
- Store materials according to manufacturer’s specifications in approved containers and conditions.
- Be prepared for possible spills by having a spill kit nearby.
- Store incompatible hazardous materials in separate areas.
- Store bulk items within secondary containment areas if items are stored outside.
- Dispose of unused or waste materials properly.
- Whenever possible, store materials in their original containers to maintain appropriate labeling.

**DON’T**
- DO NOT place hazardous waste in solid waste dumpsters.
- DO NOT pour liquid chemical waste down floor drains, sinks, toilets, ditches, on the ground or storm drain inlets.
- DO NOT mix petroleum waste and chemical waste.
- DO NOT dispose of any gasoline-contaminated waste in the regular trash. Dispose of it only as a hazardous waste.
- DO NOT store chemicals or petroleum products near a storm drain.
Sand and Salt Storage/ Application SOP

What
Proper Sand and Salt Storage and monitoring application rates on City roads and other City facilities is one way to limit the discharge of chloride contaminants to our creeks, streams, lakes and groundwater.

Who
All employees involved with snow removal and deicing material storage and application. This includes all contracted workers who remove snow or apply deicing materials.

Why
To protect stormwater by properly storing and applying deicing materials. The application of road salt for accident prevention is a significant source of chloride to the environment. Chlorides readily dissolve and enter stream environments during snowmelt or runoff events posing harm to aquatic organisms and those that feed on them. In addition, road salt leads to the corrosion of infrastructure such as bridges, pavement, metal culverts, and vehicles.

How

<table>
<thead>
<tr>
<th>DO</th>
<th>DON'T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use the minimum amount of salt and sand needed to get the job done.</td>
<td>DO NOT dispose of wash water from sanding and salting trucks into the storm drain system or a ditch. Clean only into designated containment area.</td>
</tr>
<tr>
<td>Calibrate sand/salt trucks to control the rate of application.</td>
<td></td>
</tr>
<tr>
<td>Contain stormwater runoff from areas where salt is stored by using buffers to diffuse runoff before entering waterbodies.</td>
<td></td>
</tr>
<tr>
<td>Cover sand/salt and salt piles that are situated on impervious surfaces.</td>
<td></td>
</tr>
<tr>
<td>Cleanup “track out” around loading area at storage facility after storm events.</td>
<td></td>
</tr>
<tr>
<td>Utilize proper vehicle and equipment washing procedures.</td>
<td></td>
</tr>
<tr>
<td>Consider road temperatures when determining volume of salt to apply.</td>
<td></td>
</tr>
<tr>
<td>When applicable, utilized neutralizing agent.</td>
<td></td>
</tr>
</tbody>
</table>
Spill Prevention and Control SOP

What
Spill prevention and control is an operational best management practice (BMP) developed to control pollutant discharges by promoting proper use of equipment during fueling, cleaning, painting and chemical application activities and any other activities that involve a liquid that could be spilled. Spill prevention is one of the most preventable causes of water quality pollution that occurs. Spill prevention BMPS focus on planning, prevention and response.

These procedures are critical steps that must be included in everyday work activities to protect stormwater from contact with pollutants and are a joint responsibility of everyone in the workplace who utilizes chemicals; fuels, maintains or repairs vehicles or equipment; applies landscape chemicals or conducts municipal operations with liquids.

Who
All City employees who work with any chemicals, solutions, paints, fuels, automobile fluids or any other materials that can be spilled.

Why
To protect stormwater by utilizing proper spill cleanup procedures, state reporting requirements and preventative actions.

How

<table>
<thead>
<tr>
<th>DO</th>
<th>DON'T</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Keep all work areas neat and well organized with only enough chemicals to get the job done.</td>
<td>- DO NOT wash a spill into the storm drain or a water body.</td>
</tr>
<tr>
<td>- Stop the source of the spill.</td>
<td>- DO NOT leave a spill without cleaning it up.</td>
</tr>
<tr>
<td>- Contain any liquids.</td>
<td>- DO NOT delay in clean up of spills; delaying allows for spreading of wastes by wind, rain, and traffic. If you have to delay any cleanup, string warning tape or cone off to keep area secure.</td>
</tr>
<tr>
<td>- Contact your supervisor to report any size spill.</td>
<td>- DO NOT transfer or pour materials outdoors near or in storm drains or ditches.</td>
</tr>
<tr>
<td>Hazardous Material Call Excelsior Springs Fire Department 816-630-3000 (or if greater than 25 gallons of non-hazardous material)</td>
<td>- DO NOT hose down work area where spills could occur (unless floor drain is hooked to the sanitary sewer); use dry sweeping methods.</td>
</tr>
<tr>
<td>- Call Missouri Department of Natural Resources 1-800-361-4927 within 24 hours to report a spill of more than 50 gallons of petroleum product from an above-ground storage tank or 25 gallons from an underground storage tank. Hazardous materials have varying reportable quantities.</td>
<td>- DO NOT handle containers alone if awkward or require over-exertion on your part. Get help and spread the load.</td>
</tr>
<tr>
<td>- Cover the spill with absorbent material such as kitty litter, oil dry, sawdust, or oil absorbent pads. Do not use straw. Dispose of used absorbent material in garbage.</td>
<td>- DO NOT remove or damage spill kits; these are available to have in case of a spill event. Notify supervisor if spill kit is gone from a designated location or is missing important contents.</td>
</tr>
<tr>
<td>- Use water only when necessary and minimize use.</td>
<td></td>
</tr>
</tbody>
</table>
# Street Sweeping SOP

**What**

Street Sweeping is a maintenance activity that takes place on City roads and other City facilities (such as parking lots) to limit the discharge of contaminants to our stormwater system.

<table>
<thead>
<tr>
<th>Who</th>
<th>All employees involved with street and parking lot maintenance.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why</td>
<td>This SOP's primary goal is to remove sediment, debris and other pollutants from streets, parking areas, and paved surfaces through regular, properly timed sweeping schedules.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How</th>
<th>DO</th>
<th>DON'T</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Dispose of sweeping residual properly (reuse is unrestricted if evidence of litter and visual petroleum contamination is absent).</td>
<td>- DO NOT store street sweeping residuals in areas where stormwater could transport fines to the storm drain system or a waterbody.</td>
<td></td>
</tr>
<tr>
<td>- Sweep in a pattern that prevents materials from being pushed into storm drains/catch basin inlets.</td>
<td>- Perform additional sweeping on a seasonal schedule.</td>
<td></td>
</tr>
<tr>
<td>- Sweep all publicly accepted paved streets and parking lots at least once per year as soon as possible after snowmelt.</td>
<td>- Sweep in locations that generate debris, such as construction entrances, sand/salt loading areas, vehicle fuelling areas, vehicle equipment, and storage areas more often or on an as needed basis.</td>
<td></td>
</tr>
<tr>
<td>- Perform additional sweeping on a seasonal schedule.</td>
<td>- Maintain street sweeping equipment for maximum effectiveness.</td>
<td></td>
</tr>
</tbody>
</table>
Weed and Pest Control SOP

What
Weed and pest control includes all activities related to the prevention or eradication of weeds and pests on all City property including parks, the golf course and around City buildings/facilities.

Who
All employees and contractors who perform duties associated with weed and pest control.

Why
To protect stormwater by properly storing, applying and disposing of herbicides and pesticides.

How

**DO**
- Ensure that pesticides are only applied by personnel certified to do so.
- Use, store, and dispose of all chemicals and waste products according to manufacturer’s specifications.
- Clean up any spilled chemicals.
- Store pesticide and herbicide-contaminated waste materials in a labeled, designated, covered, and contained area.
- Use pesticides and herbicides only when necessary.
- Rinse equipment only when necessary.
- Use alternative methods to control weeds and pests such as Integrated Pest Management strategies.
- Mix/load pesticides in an area where spills can be contained.
- Pull weeds by hand or mechanically where possible.
- Spot treat affected areas only instead of entire location where applicable.
- Apply pest control at the life stage when the pest is most vulnerable.
- Choose the least toxic pesticides and herbicides that still achieve results.
- Tolerate low levels of weeds where applicable.
- Allow grass to grow 2.5 to 3 inches high, reduce thatch build up and aerate soils.
- Reduce seed release of weeds by timing cutting at seed set.
- Utilize neutralizing agent where applicable.

**DON'T**
- DO NOT mix or prepare pesticides or herbicides near storm drains.
- DO NOT apply controlled pesticides or herbicides unless certified to do so.
- DO NOT apply herbicides or pesticides before a heavy rainfall.
- DO NOT discharge rinse water or excess chemicals to storm drain or ditch.
Vehicle and Equipment Washing SOP

**What**
Vehicle and equipment washing includes washing activities at maintenance facilities and commercial car washes. If not washing in enclosed bay (discharging to a sanitary sewer), ensure washwater discharges across dense vegetation (not paved surfaces discharging to storm drains).

**Who**
All employees who operate or are responsible for vehicles and/or equipment.

**Why**
To protect stormwater using proper vehicle and equipment washing techniques, proper washing locations, and proper disposal of wash water.

**How**

<table>
<thead>
<tr>
<th>DO</th>
<th>DON'T</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Wash vehicles and equipment in the car wash at Public Works or at a commercial car wash.</td>
<td>- DO NOT perform engine washing outside or over a storm drain.</td>
</tr>
<tr>
<td>- Discharge all wash water containing contaminants to the sanitary sewer. If this is not available, discharge to a vegetated buffer.</td>
<td>- DO NOT wash vehicles over a storm drain or next to drainage ditches.</td>
</tr>
<tr>
<td>- Use a biodegradable, phosphate-free soap when not discharging to the sanitary sewer.</td>
<td></td>
</tr>
<tr>
<td>- Wash equipment on gravel, grass, or other permeable surfaces only when necessary.</td>
<td></td>
</tr>
<tr>
<td>- Minimize water and soap use when rinsing or washing vehicles.</td>
<td></td>
</tr>
</tbody>
</table>
Vehicle and Equipment Storage SOP

**What**
Vehicle and equipment storage includes all parking locations for City vehicles and equipment.

**Who**
All employees who operate or are responsible for vehicles and/or equipment.

**Why**
To protect stormwater from petroleum products that may drip or leak from vehicles and equipment being stored or from dirt and sediment that accumulate in the storage areas.

**How**

<table>
<thead>
<tr>
<th>DO</th>
<th>DON'T</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Inspect parking areas for staining/leaks on a schedule established by the appropriate personnel.</td>
<td>- DO NOT store leaking vehicles over or near a storm drain.</td>
</tr>
<tr>
<td>- Use drip pans for vehicles that drip a lot (provide a labeled location to empty and store drip pans).</td>
<td></td>
</tr>
<tr>
<td>- Maintain vehicles to prevent leaks from occurring.</td>
<td></td>
</tr>
<tr>
<td>- Address a known leak or drip as soon as possible.</td>
<td></td>
</tr>
<tr>
<td>- Whenever possible, store vehicles inside.</td>
<td></td>
</tr>
<tr>
<td>- Whenever possible, store vehicles on paved areas if you can sweep the areas regularly to remove drips/leaks/dirt.</td>
<td></td>
</tr>
<tr>
<td>- Whenever possible, perform street sweeping of paved areas on a schedule established by the appropriate personnel, and dispose of street sweepings properly.</td>
<td></td>
</tr>
<tr>
<td>- Whenever possible, perform a pre-trip inspection of vehicle.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix H – Spreadsheet Summary of Permit Activities
<table>
<thead>
<tr>
<th>PERMIT REF.</th>
<th>SWMP ACTIVITY/PROGRAM</th>
<th>FREQUENCY</th>
<th>RESPONSIBILITY</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCM #1 - PUBLIC OUTREACH AND EDUCATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.1.1.2</td>
<td>MARC Water Quality Program</td>
<td>Ongoing</td>
<td>SW, PWD</td>
<td>Fee Paid Each Feb; MARC links on City web site; MARC brochures stocked</td>
</tr>
<tr>
<td>4.2.1.1.2</td>
<td>Household Hazardous Waste Program</td>
<td>Biennial</td>
<td>SW, PWD</td>
<td>Post info for Biennial Events; Info on Web for other metro dropoffs</td>
</tr>
<tr>
<td>4.2.1.1.2</td>
<td>Dog Waste Disposal Program</td>
<td>Ongoing</td>
<td>SW, Parks</td>
<td>Bags stocked; Waste Receptacles Emptied Regularly</td>
</tr>
<tr>
<td>4.2.1.1.3</td>
<td>See 4.2.2 - Info for Public Involvement</td>
<td>Ongoing</td>
<td>SW</td>
<td>SWMP on Web/FB for comment; Info on how to volunteer on web/FB; MARC activities linked</td>
</tr>
<tr>
<td>4.2.1.1.4</td>
<td>Social Media (Facebook)</td>
<td>2x/year</td>
<td>SW</td>
<td>Track what is posted and when</td>
</tr>
<tr>
<td>4.2.1.1.4</td>
<td>Public Access TV</td>
<td>2x/year</td>
<td>SW</td>
<td>Track what is posted and when</td>
</tr>
<tr>
<td>4.2.1.1.4</td>
<td>Web site</td>
<td>Ongoing</td>
<td>SW</td>
<td>Check web links</td>
</tr>
<tr>
<td>4.2.1.1.4</td>
<td>Brochures</td>
<td>Ongoing</td>
<td>SW</td>
<td>Stock as needed</td>
</tr>
<tr>
<td>4.2.1.1.4</td>
<td>Press Releases</td>
<td>1x/year</td>
<td>SW</td>
<td>Keep copies of info sent and where sent</td>
</tr>
<tr>
<td>4.2.1.1.4</td>
<td>Public Presentations</td>
<td>2x/year (adult/kids)</td>
<td>SW</td>
<td>Summarize presentation given, where, when and to what audience (pics if possible)</td>
</tr>
<tr>
<td>4.2.1.1.4</td>
<td>Direct Mail</td>
<td>1x/year</td>
<td>SW</td>
<td>Summarize info sent or keep copy of form letter, to whom and when</td>
</tr>
<tr>
<td>MCM #2 - PUBLIC INVOLVEMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.2.1.3</td>
<td>Existing Meetings (Council, P&amp;Z)</td>
<td>Ongoing</td>
<td>SW, PWD</td>
<td>Note any meetings where SW a specific agenda item or part of discussion</td>
</tr>
<tr>
<td>4.2.2.1.3</td>
<td>Web Site</td>
<td>Ongoing</td>
<td>SW</td>
<td>Check information available annually</td>
</tr>
<tr>
<td>4.2.2.1.5</td>
<td>MARC Volunteer Activities</td>
<td>Ongoing</td>
<td>SW</td>
<td>Check information available annually</td>
</tr>
<tr>
<td>4.2.2.1.5</td>
<td>Community Group Activities</td>
<td>1x/year</td>
<td>SW</td>
<td>Work with group to do storm drain mapping or litter pickup</td>
</tr>
<tr>
<td>4.2.2.1.6</td>
<td>Door Hangers/Citizen Assistance in Education</td>
<td>1x/year</td>
<td>SW</td>
<td>Have group from 4.2.2.1.6 assist w/ door hangers in area they work</td>
</tr>
<tr>
<td>MCM #3 - ILLICIT DISCHARGE DETECTION AND ELIMINATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.3.1.1</td>
<td>Outfall Map</td>
<td>Update</td>
<td>SW, GIS</td>
<td>Update w/ new outfall definition</td>
</tr>
<tr>
<td>4.2.3.1.2</td>
<td>IDDE Ordinances</td>
<td>Review 1x/cycle</td>
<td>SW, PWD, SWC</td>
<td>Review 2021</td>
</tr>
<tr>
<td>4.2.3.1.4</td>
<td>Dry Weather Outfall Screening</td>
<td>Annual</td>
<td>SW</td>
<td>&gt;35&quot; Dia 2019; 50% of &lt;36&quot; Diam 2020; remainder in 2021</td>
</tr>
<tr>
<td>MCM #4 - CONSTRUCTION SITE RUNOFF CONTROL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.4.1.1</td>
<td>Erosion/Sediment Control Ordinances</td>
<td>Review 1x/cycle</td>
<td>SW, PWD, SWC</td>
<td>Review 2021</td>
</tr>
<tr>
<td>4.2.4.1.2</td>
<td>Construction Site Waste Ordinances</td>
<td>Review 1x/cycle</td>
<td>SW, PWD, SWC</td>
<td>Review 2021</td>
</tr>
<tr>
<td>4.2.4.1.3</td>
<td>Pre-Construction Plan Review</td>
<td>Ongoing</td>
<td>SW, PWD, SWC</td>
<td>Track number of reviews</td>
</tr>
<tr>
<td>4.2.4.1.4</td>
<td>Receive Information from Public</td>
<td>Ongoing</td>
<td>SW</td>
<td>Track number of reports from public</td>
</tr>
<tr>
<td>4.2.4.1.5</td>
<td>Construction Site Inspections</td>
<td>Ongoing</td>
<td>SW</td>
<td>Track number of inspections</td>
</tr>
<tr>
<td>4.2.4.1.6</td>
<td>Construction Site Enforcement Actions</td>
<td>Ongoing</td>
<td>SW</td>
<td>Track number of enforcement actions</td>
</tr>
<tr>
<td>MCM #5 - POST CONSTRUCTION RUNOFF CONTROL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.5.1.1</td>
<td>Detention/Treatment Requirements</td>
<td>Review 1x/cycle</td>
<td>SW, PWD, SWC</td>
<td>Review 2021</td>
</tr>
<tr>
<td>4.2.5.1.2</td>
<td>Stream Buffer Requirements</td>
<td>Review 1x/cycle</td>
<td>SW, PWD, SWC</td>
<td>Review 2021</td>
</tr>
<tr>
<td>4.2.5.1.1</td>
<td>Wetland Protection Requirements</td>
<td>Review 1x/cycle</td>
<td>SW, PWD, SWC</td>
<td>Review 2021</td>
</tr>
<tr>
<td>4.2.5.1.2</td>
<td>Long Term Q&amp;M of BMPs</td>
<td>Review 1x/cycle</td>
<td>SW, PWD, SWC</td>
<td>Review 2021</td>
</tr>
<tr>
<td>4.2.5.1.4/5</td>
<td>Post-Construction BMP Inspections</td>
<td>Ongoing</td>
<td>SW</td>
<td>Track number of inspections of which facilities</td>
</tr>
<tr>
<td>MCM #6 - GOOD HOUSEKEEPING IN MUNICIPAL OPERATIONS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.2.6.1.1</td>
<td>Employee Training</td>
<td>Annual</td>
<td>SW</td>
<td>Track number of employees trained when and on what topics</td>
</tr>
<tr>
<td>4.2.6.1.2</td>
<td>List of Municipal Operations</td>
<td>Review 1x/cycle</td>
<td>SW, PWD, SWC</td>
<td>Review 2021</td>
</tr>
<tr>
<td>4.2.6.1.3</td>
<td>MSA Maintenance</td>
<td>Ongoing</td>
<td>SW, PWD</td>
<td>Track catch basin cleaning/inspection</td>
</tr>
<tr>
<td>4.2.6.1.4</td>
<td>Street Sweeping/Salt &amp; Sand Operations</td>
<td>Ongoing</td>
<td>SW, PWD</td>
<td>Track lane miles swept</td>
</tr>
<tr>
<td>4.2.6.1.4</td>
<td>Maintenance and Storage Yards</td>
<td>Ongoing</td>
<td>SW, PWD</td>
<td>Inspect maintenance facilities annually</td>
</tr>
<tr>
<td>4.2.6.1.5</td>
<td>Waste Disposal SOPs</td>
<td>Ongoing</td>
<td>All Staff</td>
<td>Follow SOPs</td>
</tr>
<tr>
<td>4.2.6.1.6</td>
<td>Flood Control Projects</td>
<td>As Needed</td>
<td>SW, PWD, SWC</td>
<td>Review water quality impacts of any flood control projects</td>
</tr>
<tr>
<td>4.2.6.2</td>
<td>Paint, Solvents and Petroleum Products</td>
<td>Ongoing</td>
<td>SW, PWD</td>
<td>All staff follow SOPs; include storage areas during inspections (4.2.6.1.4)</td>
</tr>
</tbody>
</table>

| 5.1 | Monitoring | As Needed | SW | Any samples, measurements of analysis completed - track for 3 years |
| 5.2 | Recordkeeping | Ongoing | SW | All records from SWMP activities kept for at least 3 years |
| 5.3 | Biennial Reports | Ongoing | SW, PWD, SWC | Due Feb 2019, Feb 2021 |

* SW = Stormwater Coordinator; PWD = Public Works Director; SWC = Stormwater Consultant; GIS = GIS Coordinator