2019 Annual Report

Missouri Department of Transportation

February 28, 2020
INTRODUCTION

This annual report outlines the implementation status of each control measure, measurable goals, and a summary of activities that were achieved in the 2019 reporting cycle for each of the measures.

Public Education and Outreach
Public Involvement and Participation
Illicit Discharge Detection and Elimination
Construction Site Runoff Control
Post-Construction Site Runoff Control
Pollution Prevention/Good House Keeping
Measure 1: Public Education and Outreach

**Action:** MoDOT will educate the general public and MoDOT community on storm water issues primarily related to sediment and litter as it relates to the state’s highway system through public meetings, public events, website, email and use of media and materials. MoDOT will continue the same level of effort to reach as many persons as in the previous year through all of the above mechanisms, and will use outreach tools to explain storm water quality issues.

**Measurable Goal** - MoDOT will track how many external visitors have used our storm water webpage (www.modot.org/stormwater) and content on the webpage each year and continually update the page with the best available information on MoDOT’s role as a TS4.


⇒ From this webpage:
  - The stormwater concern form was viewed 370 unique times.
  - The stormwater brochure was viewed 19 unique times.
  - The stormwater snow removal fact sheet was viewed 0 unique times.
  - The Permit was viewed 22 unique times.
  - The SWMP was viewed 24 unique times.

**Iterative Process:** MoDOT is working on improving its web site with regard to stormwater as an effort to improve external education and promote more traffic to the page.

**Measurable Goal** – MoDOT will track use of its stormwater email (stormwater@modot.mo.gov).

⇒ The stormwater email address received 7 emails during the reporting timeframe. stormwater@modot.mo.gov.

**Iterative Process:** Email traffic has been down over the last few years. MoDOT is evaluating the email traffic for this measure. With improvements to the website, improved email traffic is expected.
Measurable Goal - MoDOT will track how many visitors have used/submitted the Report a Stormwater Concern form and how many of those were related to permit measures.

⇒ There were 92 forms submitted in the reporting cycle. Of those, 15 were applicable to IDDE measure.

Iterative Process: 2019 was the first year of MoDOT’s new web site and new Stormwater Concern Form. Use of this site are slightly down from 2018 but future changes to the Stormwater Page are expected to help this effort.

**Measurable Goal** - MoDOT will track how many stormwater brochures are disseminated each year.

⇒ The brochure is on the stormwater webpage and disseminated during out-reach opportunities at Earth Day and the State Fair. A total of 524 stormwater pamphlets were given away at Earth Day and the Missouri State Fair.

Iterative Process: MoDOT is encouraged with the direction of this measure. This number from this measurable goal has increased 210 percent from 2018. Continued improvements to the program will promote additional success of this goal.

**Measurable Goal** – MoDOT will track and report on education components related to litter prevention through its participation in No More Trash events statewide and other media outlets.

⇒ The April 2019 No More Trash! Bash campaign had 131 educations events around the state with 9,975 bags of trash picked up.
⇒ Missouri Natural Resources Conference 2019 booth.
⇒ Signage is used to communicate with the general public. There are 654 No More Trash signs in place across the state. These are primarily used in roadside parks, rest areas, welcome centers, truck parking areas, commuter lots and areas of targeted issues. There are 80 Littering signs across the state. There are 24 No Dumping signs across the state. These are used for targeted location issues. The signage numbers remain stable from year to year since signs can last 10-15 years.
⇒ Missouri State Fair 2019 and Earth Day. The stormwater bean bag toss was run all 7 days of the fair.

Iterative Process: Numbers from this goal are down from 2018 but are more than what was reported from 2017. MoDOT is encouraged that this program is successful and is a great program for reducing pollution.

**Measurable Goal** - MoDOT will continue to participate in events such as Earth Day and the State Fair. MoDOT will track participation in these events.
⇒ Earth Day at the State Capitol and the Missouri State Fair were attended in 2019 employing the bean bag toss and litter pledge.

Iterative Process: Involvement in these events helps promote MoDOT’s efforts for public education and outreach. MoDOT will continue to attend these events.

*Measure 2: Public Involvement and Participation*

**Action:** Through the above mechanisms, MoDOT will collect and respond to public comments and concerns on water quality issues related to storm water management as it relates to expansion or operation and maintenance of the state’s highway system.

**Measurable Goal:** MoDOT will report how many individuals are involved in programs MoDOT offers related to the TS4 permit including events like No More Trash Bash, Trees for Tomorrow, adopt a highway and sponsor a highway programs.
⇒ Adopt-A-Highway program. Volunteers pick up litter a minimum of four times a year. There are 5,329 volunteer groups who cover 6,419 miles of roadway.
Sponsor-A-Highway program. 17 miles of roadway are sponsored in the Kansas City District and 65 miles are sponsored in the St. Louis District.

“Trees for Tomorrow” program. This is the last year of a 5-year commitment spanning from 2014-2019. MoDOT committed to purchasing up to 250,000 seedlings each year, over a five-year period and MDC distributes the trees to youth groups throughout the state. The total breakdown of seedlings purchased in 2019 were as follows:

- Arbor Day 94,000
- MoDOT orders 1,250
- Mo Department of Conservation 66,445
- FFA orders 16,645
- Stream Team Orders 8,690
- Promo Demo Orders 29,820
- 4-H Orders 3,330
- Outdoor Classroom 2,910

Total seedlings 223,090

No More Trash Bash. There were 131 educational events and 9,975 bags of trash collected.

**Iterative Process:** Participation numbers are up slightly from 2018. MoDOT will continue to monitor this measure.

**Action:** MoDOT will continue a program to facilitate the public reporting of illicit discharges, including dumping, by providing a venue for the public to submit concerns to MoDOT.

**Measurable Goals:** MoDOT will report yearly how many visitors have submitted the Report a Stormwater Concern form and how many of those were related to permit components on MoDOT right-of-way or facilities.

- Report a Stormwater Concern (See Measure 1 for numbers).

**Iterative Process:** See iterative process for Measure 1.

**Measurable Goal:** Additionally, MoDOT will report how many reports came from internal personnel or other methods.

- Internal reports (See Measure 3 for numbers).

**Iterative Process:** See iterative process for Measure 3.

**Action:** MoDOT will continue to promote public awareness campaigns through the website and other media outlets.

**Measurable Goal:** MoDOT will report annually how many of these types of events were carried out.
Measurable Goal: MoDOT will report how many times it used media to promote awareness of stormwater issues.

MoDOT used media in at least 23 separate times to promote awareness of stormwater issues.

Iterative Process: Media usage was down slightly from 2018 but are equal to media usage reported in 2017. MoDOT will continue to monitor the measurable goal in the future.

Action: MoDOT will continue to participate in watershed activities and coordination with other MS4 communities when appropriate including the Hinkson Creek Collaborative Adaptive Management (CAM) -Action Team.

Measurable Goal - MoDOT will report annually how many times MoDOT collaborated with other MS4s.

- SL District collaborated with St. Louis Metropolitan Sewer District for the I-270 Design Build Project.
- Hinkson Creek Collaborative Adaptive Management – MoDOT is an on-going participant on the Action Committee. The action committee meets monthly.
- General Conferences for Outreach:
  - IECA Great Rivers Chapter 2019 fall conference in Omaha, NE 11/4-11/5.
- EPA Region 7 Peer Exchange – 9/9-9/11
Iterative Process: MoDOT is seeing benefits from the partnering efforts with other MS4 communities. MoDOT will continue to monitor this measurable goal.

Measure 3: Illicit Discharge Detection and Elimination (IDDE)

Action: MoDOT will continue a program to facilitate the public reporting of illicit discharges, including dumping, by providing a venue for the public to submit concerns to MoDOT and then forwarding confirmed instances to the proper authorities. Hazardous material spills will be reported within 24 hours upon discovery and will be made to the Missouri Department of Natural Resources (MDNR) Environmental Emergency Response (EER) – 573-634-2436 – in accordance with MoDOT procedures and Missouri RSMo 260.500 through 260.555.

Measurable Goal: MoDOT will report how many illicit discharge reports are received and investigated using information obtained through the website reporting form and by MoDOT staff.

⇒ MoDOT investigated a total of 71 instances of reports of illicit discharges, stormwater concerns, drainage issues, and/or illegal dumping; a majority of which were received through the website links (see Measure 1) and another 22 were through contacts with our Hazardous Waste specialists, other internal employees or other reports (MDNR/MSD/etc.).


Measurable Goal: MoDOT will report how many spills on right of way were reported to MDNR’s EER System, including vehicular accidents. Cleanup is generally directed by MDNR, MoDOT, or Highway Patrol.

⇒ Approximately 223 spills were reported on MoDOT ROW, as reported to MDNR’s EER system, including vehicular accidents. Vehicular accidents were included because it is impossible to determine from the EER reports whether the spill reached a waterway. Cleanup is generally directed by MDNR, MoDOT, private entity or Highway Patrol.

Iterative Process: Number from this measurable goal are up from last year. MoDOT will continue to track this goal and determine if there is a better way to track illicit discharges.

Action: MoDOT will educate and cross-train maintenance staff to assist with identification of illicit discharges on MoDOT right of way.
**Measurable Goal:** MoDOT will report the number of staff educated on the identification of illicit discharges that discharge into the MoDOT drainage system at least once annually through regular training or the refresher training.

⇒ A total of 543 employees were trained in the SPCC/IDDE training.
⇒ A total of 473 employees were trained in the SPCC/IDDE refresher training.

**Iterative Process:** MoDOT is evaluating its training program as it relates to MCM 3. MoDOT’s current turnover rate is 25 percent overall. MoDOT is evaluating training numbers and looking for more efficient ways of addressing the training process.

**Action:** MoDOT will continually inspect, through daily work and routine maintenance, the outfalls on MoDOT’s system.

**Measurable Goal:** MoDOT will report how many bridges/outfalls have been inspected annually.
⇒ MoDOT inspected a total of 780 outfalls in 2019. There are 50 outfalls pending evaluation that failed due to unusual conditions. MoDOT’s Environmental Section is working on determining if the pending outfalls are actually failed for illicit discharges.

**Iterative Process:** MoDOT’s process of dry weather screenings is very efficient based on the number of MoDOT staff available to conduct the inspections. MoDOT has taken steps to improve the evaluation processes related to these inspections and are looking forward to an increased responsiveness to any outfall concerns.

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**Measure 4: Construction Site Runoff Control**

**Action:** Continue training of MoDOT personnel through an annual Consent Decree training and Erosion and Sediment Control Training. MoDOT continues to conduct annual training of its design, construction and maintenance employees and contractors and consultants to ensure implementation of the SWPPP and compliance with the Land Disturbance permit.
⇒ MoDOT has training material (2014 Land Disturbance Refresher Course as well as the 2012 Land Disturbance Full Course) posted in three locations for ease of use to employees and contractor/consultants. The 2014 Land Disturbance Full Course is available in these same locations as well.

- EPG: [806.8 Storm Water Pollution Prevention Plan (SWPPP)](https://example.com) - In the box on the right, under "Additional Information".
Stormwater Management Plan

- Construction and Materials (CM) Intranet, under "Erosion Control".
- MoDOT Internet: [http://www.modot.org/Land Disturbance](http://www.modot.org/Land Disturbance) - for MoDOT land disturbance items as a resource for MoDOT, contractors and consultants.
- MoDOT U: Consent Decree Recertification Training (2019)

**Iterative Process:** MoDOT is evaluating its training program as it relates to MCM 3. With the issuance of MoDOT’s new Stacked Statewide Operating Permit MO-0137910, additional training is being incorporated to support MCM 4. This measurable goal is still viable and will continue to be monitored.

**Measurable Goal:** MoDOT will report how many MoDOT employees and how many non-MoDOT employees have taken the training classes.

⇒ Online training was the primary training vehicle in 2019. This training reinforced the elements of construction erosion and sediment control techniques and practices, elements of the consent decree, MoDOT’s general operating NPDES permit, and MoDOT’s Storm Water Pollution Prevention Plan. 79 individuals were trained through MoDOT U online training in 2019. There were 37 MoDOT employees who took the on-line training and 42 contractors, consultants, or city/county officials took the on-line training.

**Iterative Process:** MoDOT is evaluating its training program as it relates to MCM 3. With the issuance of MoDOT’s new Stacked Statewide Operating Permit MO-0137910, additional training is being incorporated to support MCM 4. This measurable goal is still viable and will continue to be monitored.

**Action:** Perform statewide audits of construction sites to ensure that specifications and SWPPP are being followed. In addition to site inspections conducted weekly and following significant rainfall events, MoDOT continues to conduct quality control audits of each project covered by the Land Disturbance permit. These audits are generally conducted at a minimum once a year per construction site to ensure consistent inspections and implementation of the SWPPP.

**Measurable Goal:** Evaluate erosion control elements of 90% of all land disturbance sites that involve 1 acre or more of land disturbance and report how many were done annually.

⇒ MoDOT conducted 68 audits on 72 construction sites that were subject to Land Disturbance permit requirements (statewide).

**Iterative Process:** MoDOT has submitted a new Stormwater Management Plan to MDNR for consideration that adjusts this measurable goal. MoDOT has been forced to adjust this measurable goal due to staffing numbers. MoDOTs
proposal meets the permit obligation and ensures continued support of the quality assurance program.

**Action:** Continue Contractor Performance Rating System for project to measure or recognize contractors’ outstanding performance as well as those being disciplined for less than satisfactory performance disciplinary action results from unacceptable rating in the categories of quality, prosecution & progress, contract compliance, and overall. The contractor performance questionnaire (see attached) includes a section of six questions related to Section 800, Roadside Development to rate the contractor on items such as seeding, erosion inspection reports, correction of deficiencies within the 7-day requirement, etc. For more information refer to EPG 102.2

**Measurable Goal:** Utilize the existing performance rating system to notify contractors when erosion control elements of the project are less than desirable as determined by elements of the SWPPP yearly per project. A numeric goal is not desirable for this action due to the sensitive nature of the process of evaluating contractors. From EPG 102.2.1-The reporting period for the annual performance project evaluation is the calendar year, January 1 through December 31 with the report for each active project due on February 1 of the following year. Final reports on projects completed during the calendar year are due 30 days after project acceptance. From EPG 102.2.7-The resident engineer must discuss performance with the contractor. If performance deficiencies exist, the contractor needs the time during the remainder of the season to provide the opportunity to improve their ratings for the year. The department does not want a contractor disciplined at the end of a construction season without assurances efforts were made to timely communicate any poor performance. It is not MoDOT’s intent or desire to disqualify contractors, but we must insist on quality construction and timely completion of projects.

**Iterative Process:** MoDOT has submitted a new Stormwater Management Plan to MDNR for consideration that adjusts this measurable goal. MoDOT still utilizes this process to evaluate contractors but due to its sensitive nature, MoDOT feels there are better measurable goals that can be used that can meet the permit requirements.

**Action:** MoDOT will continue to advance personnel knowledge of state-of-the-art practices and policies by attending events and conferences.

**Measurable Goal:** At least one annually.
- 3 MoDOT personnel attended a peer exchange with the Colorado Department of Transportation in September.
- One MoDOT employee attended a Peer Exchange between Nebraska, Kansas, Iowa, and Missouri and Federal Highway Administration in
October 2019 to discuss MS4 and Land disturbance best management practices in Lincoln, NE.

⇒ One MoDOT employee attended the IECA Great River Chapter Conference in Nebraska in November 2019.

⇒ One MoDOT employee attended a TRB webinar for “Complying with TMDL Requirements Related to Roadway Stormwater Runoff” on October 30, 2019.

⇒ One MoDOT employee attended AASHTO CEE Stormwater COP Webinar “Construction to Maintenance Handoff” on November 19, 2019.

⇒ One MoDOT employee attended a webinar for “Modernizing Compliance: Best Practices and Technologies for Performance-Based Stormwater Management” on September 27, 2019.

**Iterative Process:** Training part of MoDOT’s Strategic Vision and is a vital tool for the success of the stormwater program. MoDOT will continue to monitor the effects of this measurable goal.

### Measure 5: Post-Construction Site Runoff Control

**Action:** Create a Stormwater Team to assist in development of policy regarding post-construction bmps and other MCMs. MoDOT’s stormwater team is made up of construction, maintenance, design, and environmental personnel to assist in development of policies.

**Measurable Goal:** Report policy changes or additions in the reporting cycle.

⇒ EPG Article 127.25 and Article 806.6 were updated on 1/10/2019 to address guidance for minor spills in support of MCM 6 Pollution Prevention/Good House Keeping.

⇒ EPG Article 107 and Standard Specifications Sec. 107 were updated on 1/28/2019 to address oil distributor truck and tanker storage requirements in support of MCM 6 Pollution Prevention/Good House Keeping.

⇒ Standard Specification 806.10 was updated to clarify rock size used in temporary crossings to meet meet Sec 404 permit requirements in support of MCM 4 Construction Stormwater Runoff Control.

⇒ Stormwater Database quick reference guides located in EPG 101 were updated on 4/1/2019, 7/11/2019, and 12/4/2019 due to system upgrades in support of MCM 4 Construction Stormwater Runoff Control.

⇒ Updated MoDOT’s SWPPP form on 11/7/2019 and 12/13/2019 to meet requirements of the amended State Operating Permit MO-0137910 in support of MCM 4 Construction Stormwater Runoff Control.
**Iterative Process:** MoDOT’s Engineering Policy Guide is the sole location for all MoDOT engineering policies. Continual improvement in policy updates shows efforts to improve MoDOT process to support the permit goals. MoDOT will continue to track this measure.

**Action:** Train MoDOT personnel to consider post-construction BMPs where required by policy definitions of new development and redevelopment in the STIP process. Proceed through the process of tracking and officially inspecting permanent BMPs on an every other year basis. They are inspected regularly during routine maintenance activities.

**Measurable Goal:** Report how many projects were evaluated in the reporting cycle. MoDOT evaluates and documents these considerations through the Request for Environmental Services (RES) process. RES’s are submitted multiple times in the project development process and may have the same response.

⇒ In 2019, staff reviewed 2790 individual RES’s.
   - 345 of those were in regulated TS4 areas.
     - 6 of those were potentially new development
     - 104 of those were potentially redevelopment
     - 235 of those were maintenance
   - 516 projects did not meet the one acre threshold for BMP consideration.
   - 1929 projects were outside the TS4 area.

**Iterative Process:** Tracking of RES submittals shows MoDOT’s commitment to the permit obligation and MoDOT’s program for MCM 5. MoDOT will continue to monitor this measurable goal.

**Measurable Goal:** The number of post-construction bmps constructed during the reporting cycle.

⇒ In 2019 MoDOT constructed 14 BMPs within the TS4 area.
   - Detention basin constructed under job 5S3000 (Christian County Route 14 in Ozark).
   - Five detention basins constructed under job 6I2423 (St.Louis County Route 141 and Route 44 near Fenton).
   - Under ground detention basin constructed under 8P3101 (Christian County Route 65 in Springfield)
   - Grassy swale under job 6S3100 (St Charles County Route 364).
   - Detention Basin under job 8P0588H (Christian County Route 14 in Springfield).
   - Two detention basins constructed under job 8P0588I (Christian County Route 14 in Ozark).
   - Two bioretention basins under job 6S3141D (St. Louis County Route 109 in Wildwood)
Bioretention basin under 6S3141B (St. Louis County Route 109 in Wildwood).

**Iterative Process:** Tracking of post-construction BMPs constructed in the reporting year shows MoDOT’s commitment to the permit obligation and MoDOT’s program for MCM 5. BMPs constructed in 2019 were down from the previous year but this number will have slight variations depending on projects planned in the state’s improvement program. MoDOT will continue to monitor this measurable goal.

**Measurable Goal:** How many BMPs are inspected during the reporting cycle and if any fail inspection.

⇒ 45 BMPs were inspected in 2019. Five of the 45 BMPs inspected were marked faild due to maintenance needs. Maintenance needs varied from litter to overgrown vegetation and trees. MoDOT’s Maintenance Division was contacted in the respective districts for the necessary maintenance.

**Iterative Process:** Tracking of post-construction BMP inspections shows the progress of MoDOT’s maintenance program. Staffing changes have assisted in improving this measurable goals progress numbers. MoDOT will continue to monitor this measurable goal.

**Measureable Goal:** Train design staff at least every other year and report how many were trained in the reporting cycle.

⇒ 2019 was an off training year.

**Iterative Process:** Training part of MoDOT’s Strategic Vision and is a vital tool for the success of the stormwater program. MoDOT will continue to monitor the effects of this measurable goal.

**Action:** MoDOT’s system crosses other regulated MS4s. Coordination and partnering with other MS4 communities provides opportunities to work together to facilitate compliance with like goals.

**Measureable Goal:** MoDOT will report what types and how many coordination events are occurring.

⇒ MoDOT has been in contact with the following MS4s during this reporting cycle:
  - City of Columbia – Hinkson CAM meetings.
  - Metropolitan St. Louis Sewer District – Steering Committee Meetings.
  - Metropolitan St. Louis Sewer District coordination meetings for the 270 North Design Build project.
Iterative Process: MoDOT is seeing benefits from the partnering efforts with other MS4 communities. MoDOT will continue to monitor this measurable goal.

**Measure 6: Pollution Prevention/Good House Keeping**

**Action:** Continue to educate maintenance staff and MoDOT general staff on SPCC and NEPA. Evaluate the effectiveness of housekeeping activities and identify those processes and/or procedures that are impacting waters of the state using semi-annual inspections of all MoDOT facilities to assess compliance.

**Measurable Goal:** SPCC, IDDE, MCM6, and various other trainings at least every other year.

- Winter Operations Training – approximately 3,500 employees statewide participated in the training November 7, 2019. This effort focuses on winter operation rolls from the emergency operations centers to snow plow operators. Proper equipment function and plowing techniques are outlined. Guidance on beat juice, salt, sand, and brine applications are reviewed.
- SPCC/IDDE Training
  - A total of 183 maintenance and 11 non-maintenance employees were trained in SPCC Spill Drill.
  - A total of 588 maintenance and 64 non-maintenance employees were trained in Spill Drill refresher training.
- Good Housekeeping Training
  - A total of 2 maintenance employees were trained in the Good Housekeeping training.
- FRCP inspections
  - All facilities (Table 1) that have FRCPs were inspected in 2019.

Iterative Process: MoDOT is evaluating its training program as it relates to MCM 6. MoDOT’s current turnover rate is 25 percent overall. Training numbers have declined in the last couple of years and are not sufficient to promote a successful program. MoDOT is working to improve this program for 2020.
**Action:** Continue dialogue with the Environmental Steering Committee (ESC) to evaluate the effectiveness of housekeeping processes and procedures. Formed in 2007, the ESC was established to provide a venue to discuss storm water issues and other environmental topics as they come up for the department. The ESC meets three times a year. The ESC has additionally provided guidance on issues concerning compliance with the consent decree with EPA and DOJ action regarding NOVs, and wastewater facility permits and compliance. Ongoing inspections of maintenance facilities found that not only storm water control has improved but all aspects of environmental compliance over the last several inspection cycles. Under direction of the ESC, MoDOT will continue to evaluate existing maintenance operation policies that have potential to impact water quality. Many of the implemented and proposed changes in MoDOT’s winter operations have had, or may have, a positive impact on water quality:

**Measurable Goal:** Document how many times and what topics regarding the TS4 are discussed at the quarterly ESC meetings.

⇒ There only one meeting in 2019 of the ESC. MoDOT is looking at revamping the ESC meeting to better serve the intended task of the group. Updates to MoDOT’s TS4 and Land Disturbance Permit program were discussed at the May 14, 2019 meeting. Updates to the new stacked statewide operating permit were provided as well as improvements to the Stormwater Database were outlined.

**Iterative Process:** MoDOT is evaluating the Environmental Steering Committee charter and goals for the team. The team direction has evolved away from its original intent and has not been an effective tool for promoting innovative solutions to water quality and other environmental challenges.

**Action:** MoDOT uses chemicals and abrasives during winter operations to facilitate the safe travel of motorists using state roads. MoDOT’s control of winter operations is governed by [EPG 133](#).

**Measurable Goal:** Report materials used for statewide winter operations for calendar year 2019:
Beet Juice usage: 689,735 gallons.

Salt Usage:
- Calcium chloride, dry flake and pellet – 839,501 lbs. and 221,659 lbs., respectively
- Liquid calcium chloride – 109,187 gallons
- Salt brine – 4,301,950 gallons
- Salt, sodium chloride – 183,358 tons
- Ice Ban (magnesium chloride) – 181,130 gallons

Other types of materials include aggregate chips, aggregate sand, etc.
- Aggregate sand – 55,405 tons
- Aggregate clean cinders – 4,943 tons
- Aggregate limestone chips – 24,268 tons
- Aggregate snow & ice abrasives – 47,278 tons

Iterative Process: Winter operations is one of MoDOT’s critical roles to protect the safety of the traveling public. Tracking the use of chemical usage is not only an environmental concern but also a financial exercise. Efficient use of material helps the environment but also documents good stewardship of taxpayer’s money. MoDOT will continue to monitor this measurable goal.

Action: Develop and test new housekeeping processes and procedures to add to current available resources and techniques including ways to minimize or prevent the spread of exotic/invasive plants, or pollutants.

Measurable Goal: Report any new processes’ or procedures that are adopted.

MoDOT has focused on ways to minimize the impact to the environment due to winter operations. The one common denominator in this effort is to look at ways to minimize the amount of chlorides used in response to winter events. One method of minimizing chlorides is the use of beet juice which is an alcohol based agricultural by-product. Beet Juice can be directly applied to road surfaces and bridges as a treatment in advance of a winter event or it can be applied to road salt to help prevent scatter and make it more effective. Another method of reducing chlorides is the use of corrosion inhibited magnesium chloride as an additive to road salt. This increases the effectiveness of the road salt, thus allowing us to use less. A final method of reducing the use of chlorides is the use of brine applications in advance of winter events rather than road salt. This can reduce the amount of sodium chloride to a fourth of what is used if road salt is applied.

In addition to these methods, MoDOT partners with the National Weather Service and has a contract with a private weather forecasting service to assure that the most accurate forecasts are used. This can help MoDOT provide the most practical but still effective response to winter events.
Iterative Process: MoDOT is seeing benefits in evaluating current processes and searching for new process and procedures to assist in efforts to reduce pollution. MoDOT will continue to monitor this measurable goal.

Action: Bridge cleaning and flushing are used to remove de-icing chemicals from the bridge deck, drains, expansion device drains, piers, abutments, and lower truss chords; thereby prolonging the life of the structure. Bridge cleaning activities use dry methods and equipment (scraping, sweeping, and vacuuming), to prevent debris, sediment, and other substances from entering waters of the State. Bridge flushing and cleaning shall adhere to the process and procedures outlined in the EPG 771.2 and the beneficial use requirements outlined in EPG 127.25.1.4.

Measurable Goal: MoDOT will ensure the appropriate BMPs are being implemented prior to and during such activities and report approximately how many bridges are flushed/cleaned in a reporting cycle.

⇒ 5,422 bridges flushed/cleaned in 2019.

Iterative Process: Bridge flushing and cleaning is an effective way to protect one of MoDOT’s critical assets, its bridges. Tracking this effort identifies the potential conflict points of this critical operation and potential for pollution. MoDOT will continue to monitor this measurable goal.
### Stormwater Management Plan

<table>
<thead>
<tr>
<th>FID</th>
<th>NAME</th>
<th>DISTRICT</th>
<th>COUNTY_NAM</th>
<th>TYPE</th>
<th>TEXT_DIREC</th>
<th>Adjacent MS4 Operator</th>
<th>Name of Receiving Water Body</th>
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<tbody>
<tr>
<td>1</td>
<td>ST. JOSEPH COMMUTER LOT</td>
<td>1 BUCHANAN</td>
<td>St. Joseph</td>
<td>Commuter Lot</td>
<td>IS 29 AND US 169</td>
<td>St. Joseph</td>
<td>Trib. Candy Creek</td>
</tr>
<tr>
<td>2</td>
<td>ST. JOSEPH EAST</td>
<td>1 BUCHANAN</td>
<td>St. Joseph</td>
<td>Shed</td>
<td>1/4 mile East of I-29 at the South US 169 ext</td>
<td>St. Joseph</td>
<td>Trib. Candy Creek</td>
</tr>
<tr>
<td>3</td>
<td>ST. JOSEPH DISTRICT OFFICE</td>
<td>1 BUCHANAN</td>
<td>St. Joseph</td>
<td>Complex</td>
<td>3602 N Belt hwy</td>
<td>St. Joseph</td>
<td>Trib. Missouri River</td>
</tr>
<tr>
<td>4</td>
<td>HANIBAL COMPLEX</td>
<td>2 MARION</td>
<td>Hannibal</td>
<td>Complex</td>
<td>US 61 S 1 Mile south of R R MM 1.2 miles</td>
<td>Hannibal</td>
<td>Trib. Bear Creek</td>
</tr>
<tr>
<td>5</td>
<td>LEES SUMMIT DISTRICT</td>
<td>3 JACKSON</td>
<td>Lees Summit</td>
<td>Complex</td>
<td>Exit 10A from IS-470 S turn right, turn right on first road right 1 mile up Independence Ave. Shed on right</td>
<td>Lees Summit</td>
<td>Trib. Unity Lake #2</td>
</tr>
<tr>
<td>6</td>
<td>18TH AND INDIANA</td>
<td>3 JACKSON</td>
<td>Kansas City UA</td>
<td>Shed</td>
<td>18TH AND INDIANA (Motorist Assist)</td>
<td>Kansas City UA</td>
<td>to treatment facility</td>
</tr>
<tr>
<td>7</td>
<td>BELTON</td>
<td>3 CASS</td>
<td>Kansas City UA</td>
<td>Shed</td>
<td>West Outer road South of US 71 and south of MO 58</td>
<td>Kansas City UA</td>
<td>East Creek</td>
</tr>
<tr>
<td>8</td>
<td>INDEPENDENCE</td>
<td>3 JACKSON</td>
<td>Kansas City UA</td>
<td>Shed</td>
<td>West of I-291 and south of MO 24</td>
<td>Kansas City UA</td>
<td>Trib. Mill Creek</td>
</tr>
<tr>
<td>9</td>
<td>LEES SUMMIT STROTHER RD</td>
<td>3 JACKSON</td>
<td>Kansas City UA</td>
<td>Shed</td>
<td>West of 291 and south of Strother Rd</td>
<td>Lees Summit</td>
<td>Trib. Lakeview Lakes</td>
</tr>
<tr>
<td>11</td>
<td>MULBERRY</td>
<td>3 JACKSON</td>
<td>Kansas City UA</td>
<td>Shed</td>
<td>650 Mulberry St, Kansas City</td>
<td>Kansas City UA</td>
<td>to treatment facility</td>
</tr>
<tr>
<td>12</td>
<td>NORTHMOOR</td>
<td>3 PLATTE</td>
<td>Kansas City UA</td>
<td>Shed</td>
<td>Off westside of road</td>
<td>Kansas City UA</td>
<td>Lino Creek</td>
</tr>
<tr>
<td>13</td>
<td>SEDALIA</td>
<td>3 PETTIS</td>
<td>Sedalia</td>
<td>Shed</td>
<td>2200 South Limit, off 65 South by Mo State Fairgrounds</td>
<td>Sedalia</td>
<td>Trib. Flat Creek</td>
</tr>
<tr>
<td>14</td>
<td>SKIERS</td>
<td>3 CLAY</td>
<td>Kansas City UA</td>
<td>Shed</td>
<td></td>
<td>Kansas City UA</td>
<td>Trib. Missouri River</td>
</tr>
<tr>
<td>15</td>
<td>STADIUM</td>
<td>3 JACKSON</td>
<td>Kansas City UA</td>
<td>Shed</td>
<td>SE outer rd of I-70 and Blue Ridge Cutoff Behind Holiday Inn</td>
<td>Kansas City UA</td>
<td>Little Blue River</td>
</tr>
<tr>
<td>16</td>
<td>JEFFERSON CITY DISTRICT</td>
<td>4 COLE</td>
<td>Jefferson City</td>
<td>Complex</td>
<td>DISTRICT 5 COMPLEX</td>
<td>Jefferson City</td>
<td>Wears Creek</td>
</tr>
<tr>
<td>17</td>
<td>COLUMBIA</td>
<td>4 BOONE</td>
<td>Columbia</td>
<td>Shed</td>
<td>Off I-75 North of US 63 1.4 miles north, on the northside of the road</td>
<td>Columbia</td>
<td>Trib. Hinkson Creek</td>
</tr>
<tr>
<td>18</td>
<td>FULTON</td>
<td>4 CALLAWAY</td>
<td>Fulton</td>
<td>Shed</td>
<td>Off I-55 S 1.44 miles East on Frontage Road</td>
<td>Fulton</td>
<td>Trib. Stinson Creek</td>
</tr>
<tr>
<td>19</td>
<td>JEFFERSON CITY</td>
<td>4 COLE</td>
<td>Jefferson City</td>
<td>Shed</td>
<td>Off I-55 S 1.44 miles East on Frontage Road</td>
<td>Jefferson City</td>
<td>Trib. Binder Lake</td>
</tr>
<tr>
<td>20</td>
<td>LEBANON</td>
<td>4 LACLEDE</td>
<td>Lebanon</td>
<td>Shed</td>
<td>Off I-55 S 1.44 miles East from US 47 to 1st st on left</td>
<td>Lebanon</td>
<td>Trib. Goodwill Hollow</td>
</tr>
<tr>
<td>21</td>
<td>BALLAS</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>Northeast corner of I-64/40 &amp; Ballas road (Call Ahead)</td>
<td>Town &amp; Country-MSD</td>
<td>Trib. Deer Creek</td>
</tr>
<tr>
<td>22</td>
<td>BELLEFONTAINE</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>From i-55 to route 40 to north</td>
<td>St. Louis UA</td>
<td>Trib. Malone Creek</td>
</tr>
<tr>
<td>23</td>
<td>BROADWAY</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>From 40 to Hwy 63 to Barnes</td>
<td>St. Louis UA</td>
<td>Big River</td>
</tr>
<tr>
<td>24</td>
<td>CEDAR HILL</td>
<td>5 JEFFERSON</td>
<td>Jefferson City</td>
<td>Shed</td>
<td>Off of MO 30 on Local Hillsboro Road</td>
<td>St. Louis UA</td>
<td>Trib. Big River</td>
</tr>
<tr>
<td>25</td>
<td>EUREKA</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>On North Outer Rd, take 10th from 44-44, turn left 1 mile down on right</td>
<td>Eureka</td>
<td>Flat Creek</td>
</tr>
<tr>
<td>26</td>
<td>FEISTUS</td>
<td>5 JEFFERSON</td>
<td>Jefferson City</td>
<td>Shed</td>
<td>1000 Airport Rd. Take U.S. 61 approximately 0.5 miles south of U.S. 67 to Airport Rd.</td>
<td>St. Louis UA</td>
<td>Plattn Creek</td>
</tr>
<tr>
<td>27</td>
<td>HAMPTON</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>Off of MO 630 on Local Hillsboro Road</td>
<td>St. Louis UA</td>
<td>River Des Peres</td>
</tr>
<tr>
<td>28</td>
<td>LEMAY</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>Near I-55 &amp; Bayless. From I-55 go W on Bayless to Union, left on Union cross i-55 go left on Hoffman until you reach shed</td>
<td>St. Louis UA</td>
<td>Gravois Creek</td>
</tr>
<tr>
<td>29</td>
<td>NORRIS</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>Southeast corner of I-70 at Bermuda Road</td>
<td>Normandy MSD</td>
<td>Marlene Creek</td>
</tr>
<tr>
<td>30</td>
<td>BARRETT STATION</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>BARRETT STATION</td>
<td>St. Louis UA</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>CHESTERFIELD</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>CHESTERFIELD</td>
<td>Town &amp; Country-MSD</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>ST CHARLES</td>
<td>5 ST. CHARLES</td>
<td>St. Louis</td>
<td>Shed</td>
<td>Old 94 and Meagre Rd, Hwy 94 to Pralle, left on old 94</td>
<td>Town &amp; Country-MSD</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>SUNSET HILLS</td>
<td>5 ST. LOUIS</td>
<td>St. Louis</td>
<td>Shed</td>
<td>On RM 50 between 270 and 141 on Roehling Rd, 1/4 on left</td>
<td>Sunset Hills-MSD</td>
<td>Trib. Monacree River</td>
</tr>
<tr>
<td>34</td>
<td>WENTZVILLE</td>
<td>5 ST. CHARLES</td>
<td>St. Louis</td>
<td>Shed</td>
<td>0.75 miles North of R R A</td>
<td>St. Louis UA</td>
<td>Trib. Dry Branch Creek</td>
</tr>
<tr>
<td>35</td>
<td>BARNHART</td>
<td>5 JEFFERSON</td>
<td>Barnhart</td>
<td>Shed</td>
<td>Off R R A 4.4 mile west of 65, then .2 mile north on Fairenwest side of road</td>
<td>St. Louis UA</td>
<td>Glazo Creek</td>
</tr>
<tr>
<td>36</td>
<td>SPRINGFIELD COMPLEX</td>
<td>6 GREECE</td>
<td>Springfield</td>
<td>Complex</td>
<td>From Jct 60 &amp; 59 Go N on Bus 60 1 mile on left next to Meeks</td>
<td>Springfield</td>
<td>Trib. South Dry Sac River</td>
</tr>
<tr>
<td>37</td>
<td>BOLIVAR</td>
<td>6 POLK</td>
<td>Bolivar</td>
<td>Shed</td>
<td>R R A .2 mile East of R R A</td>
<td>Bolivar</td>
<td>Branch Creek</td>
</tr>
<tr>
<td>38</td>
<td>CARROLL</td>
<td>6 JASPER</td>
<td>Carroll</td>
<td>Shed</td>
<td>Center of 171 &amp; 96 one mile West of town</td>
<td>Carroll</td>
<td>Trib. Spring River</td>
</tr>
<tr>
<td>39</td>
<td>JOPLIN</td>
<td>6 JASPER</td>
<td>Joplin</td>
<td>Shed</td>
<td>.4 mile East of Bus 71 off I-FF</td>
<td>Joplin</td>
<td>Trib. Silver Creek</td>
</tr>
<tr>
<td>40</td>
<td>NEOSHO</td>
<td>6 NEWTON</td>
<td>Neosho</td>
<td>Shed</td>
<td>From Jct 60 &amp; 59 Go N on Bus 60 1 mile on left next to Meeks</td>
<td>Neosho</td>
<td>Trib. Hickory Creek</td>
</tr>
<tr>
<td>41</td>
<td>OZARK</td>
<td>6 CHRISTIAN</td>
<td>Springfield</td>
<td>Shed</td>
<td>R R A .2 mile East of R R A</td>
<td>Springfield</td>
<td>Trib. Elk Valley</td>
</tr>
<tr>
<td>42</td>
<td>STRAFFORD INMATE LOT</td>
<td>6 GREECE</td>
<td>Springfield</td>
<td>Shed</td>
<td>412 West to R R A on O. 1 mile on right (white fence)</td>
<td>Springfield</td>
<td>Pearson Creek</td>
</tr>
<tr>
<td>43</td>
<td>KENNEDY</td>
<td>7 DUNKLIN</td>
<td>Kennett</td>
<td>Shed</td>
<td>Adjacent MS4 Operator</td>
<td>Kennett</td>
<td>Pettis County</td>
</tr>
<tr>
<td>44</td>
<td>POPULAR BLUFF</td>
<td>7 BUTLER</td>
<td>Popular Bluff</td>
<td>Shed</td>
<td>500 South on US 60</td>
<td>Popular Bluff</td>
<td>Trib. Black River and Trib. Pasture Creek</td>
</tr>
<tr>
<td>45</td>
<td>SIKESTON</td>
<td>7 SCOTT</td>
<td>Sikeston</td>
<td>Shed</td>
<td>1.5 miles West of Us 60</td>
<td>Sikeston</td>
<td>Trib. St. Johns Ditch</td>
</tr>
</tbody>
</table>

| 19 | | | | | |

Table 1: MoDOT facilities within the TS4 coverage area that have operations activities and are required to have a FRCP.