



# **Phase II Stormwater Management Program 2021 Annual Report**

**Permit No. MI0057364**

March 2022

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## Acronyms and Abbreviations

BMP	Best Management Practice
EOC	Engineering Operations Committee
EGLE	The Michigan Department of Environment, Great Lakes, and Energy
IDEP	Illicit Discharge Elimination Program
LTAP	Local Technical Assistance Program
MDOT	Michigan Department of Transportation
MEP	Maximum Extent Practicable
MPO	Metropolitan Planning Organization
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
PIPP	Pollution Incident Prevention Plans
QAQC	Quality Assurance Quality Control
SEMCOG	Southeast Michigan Council of Governments
SESC	Soil Erosion and Sedimentation Control
SMP	Stormwater Management Plan
TMDL	Total Maximum Daily Load
TSC	Transportation Service Center
YTD	Year to Date

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Appendix D – Post Construction Stormwater Management Activities

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# 1. Introduction

This Annual Report presents stormwater pollution control activities implemented by Michigan Department of Transportation (MDOT) during the 2021 monitoring period, in compliance with the National Pollutant Discharge Elimination System (NPDES) Permit No. MI0057364, hereinafter referred to as the Permit. The Permit was issued by the Michigan Environment, Great Lakes & Energy (EGLE) on November 1, 2021. The permit will expire October 1, 2026.

MDOT has created a comprehensive Stormwater Management Plan (SMP) designed to reduce the discharge of pollutants from the MDOT drainage systems to the maximum extent practicable (MEP), protect the designated uses of the waters of the state, increase awareness of stormwater as a potential source of pollutants, and satisfy the applicable state and federal water quality requirements.

## ***1.1. Report Objectives***

The objectives for this annual report are as follows:

- To inform MDOT Staff about SMP activity accomplishments.
- To satisfy MDOT's biennial reporting requirement of the Permit.
- To evaluate and assess the appropriateness and effectiveness of MDOT's SMP.
- To present information about new programs, changes to current programs and procedures developed by MDOT.

## ***1.2. Report Organization***

The annual report highlights actions MDOT has completed in 2021 to fulfill Permit requirements. The reported information closely follows the requirements of the six minimum measures of the Permit which include:

- Public Education Program
- Public Involvement and Participation
- Illicit Discharge Elimination Plan (IDEP)
- Post Construction Stormwater Management for New Development and Redevelopment Projects
- Construction Stormwater Runoff Control
- Pollution Prevention/Good Housekeeping for MDOT Operations.

Details on these activities can be found in the appendices at the end of the report.

## ***1.3. Program Assessment***

Program assessment is primarily determined by MDOT's adherence to the activities and measurable goals committed to in the SMP, as well as regular evaluation of stormwater related procedures, training, and programs.

## **1.4. Summary**

During 2021, MDOT worked toward completing the activities laid out in the SMP. Several of these activities are ongoing and completed each year. Due to time and budget management purposes, activities that are not required to be completed each year are divided between the five years of the permit cycle.

With the updated SMP, care will be taken to ensure that MDOT's commitments, as written in the SMP, are fulfilled; however, as the program evolves, modifications may need to be made to the original activity, the measurable goal, or both. Details regarding current activities, measurable goals, and their assessment method are contained in the Appendices.

MDOT will continue to integrate stormwater management awareness across all business areas. Informing and educating MDOT Regions, TSCs, Maintenance Regions, and Garages about the new stormwater permit requirements will be a priority in 2022. Significant changes have been implemented that will impact many design and operational functions of MDOT. MDOT remains committed to allocating the necessary resources to meet the requirements of the Permit meeting environmental regulations for stormwater discharges.

## 2. Public Education Program

To educate MDOT employees as well as the general and job-related public on stormwater management, MDOT has developed several mediums for which to convey information. MDOT employees have access to information focused on stormwater by utilizing the reference library, various training modules, a pesticide/fertilizer certification course, and stormwater operator staff training. The job-related public is provided with specific information when applying for a permit, such as a tap-in discharge permit.

MDOT has developed several displays and handout materials targeting the general public's various audiences including school-age children and transportation construction. The materials are available, in electronic format, for viewing and downloading from the MDOT Stormwater Public Web Page. In addition, MDOT distributes these materials at various events, as applicable.

The following section presents the seven Public Education Program activities as outlined in the SMP. Appendix A presents each activity's table, including a description of objectives completed in 2021.

### **2.1. Activities**

The following activities are presented in table format with the current monitoring year results in Appendix A. Detailed descriptions of each activity can be referenced in the SMP.

- Education 1: Stormwater and Watershed Stewardship Reference Library
- Education 2: Stormwater Management Website
- Education 3: Stormwater Management Education Brochures
- Education 4: Educational Materials for Tap-In Discharge Permits
- Education 5: Training Modules
- Education 6: Certify MDOT's Staff for Pesticide/Fertilizer Applications
- Education 7: Staff Training for Part 91 and Stormwater Operators

### **2.2. Upcoming Monitoring Year Goals**

Future monitoring years will include various efforts within the Public Education Program, as presented below:

For Activity Education 1, the stormwater intranet site will be continuously updated to educate the job related public in 2022.

For Activity Education 2, a contact for questions and concerns related to MDOT's stormwater

management program was added to the website. This will make it easier for the general public to voice opinions about the program. This activity is closely related to the measurable goal Public Involvement and Participation.

MDOT will review and update educational brochures related to stormwater management in 2022 as described in Activity Education 3. These brochures will continue to be passed out at relevant events, as well.

Activity Education 4 involves reviewing and updating the educational materials that are distributed along with Tap-In Discharge Permits.

MDOT will continue to review and update the training modules, have staff trained in pesticide and fertilizer application, and track the number of staff trained under Part 91 and Stormwater Operators as described in Activities Education 5, 6 and 7.

### 3. Public Involvement and Participation

In addition to providing educational materials to MDOT staff and the public, MDOT is also working to encourage public input in the SMP and strengthen relationships with other agencies interested in the better management of stormwater. Strategies have been devised to encourage and track comments to the SMP on the public stormwater website and to pursue relationships with other state and local agencies to further stormwater management practices on various projects. Several activities listed under other minimum measures will also help to achieve the goal of this minimum measure.

The following section presents the three Public Involvement and Participation activities as outlined in the SMP. Appendix B presents each activity's table, including a description of objectives completed in 2021.

#### **3.1. Activities**

The following activities are presented in table format with the current monitoring year results in Appendix B. Detailed descriptions of each activity can be referenced in the SMP.

- Public Involvement 1: Public Comment of SMP
- Public Involvement 2: Development of Offset Program
- Public Involvement 3: Identify and Coordinate with MPOs Having SMPs

#### **3.2. Upcoming Monitoring Year Goals**

Future monitoring years will include various efforts within Public Involvement & Participation, as presented below.

Under Activity Public Involvement 1, MDOT finalized the SMP in November 2021 and posted it on MDOT's stormwater website and distributed the link to all TSCs and Region offices.

Activity Public Involvement 2 involves developing a list of organizations for other state agencies, drain commissioners and municipalities to reach out to for offset programs.

MDOT will continue to consider watershed and environmental groups input during early coordination of MDOT projects, per the objective of Activity Public Involvement 3.

## 4. Illicit Discharge Elimination Plan

This annual report assesses the IDEP as one of the six minimum measures stated in the Permit to be reviewed by EGLE. The framework for the IDEP activities is outlined in the MDOT SMP (MDOT, 2016). MDOT's strategies provide for continued identification of illicit discharges and the notification and removal of such connections and discharges.

The following section presents the five IDEP activities as outlined in the SMP. Appendix C presents each activity's table, including a description of objectives completed in 2021.

### 4.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix C. Detailed descriptions of each activity can be referenced in the SMP.

- IDEP 1: Maintain List of Construction Projects and Maintenance Activities
- IDEP 2: Urban Area Outfall Mapping
- IDEP 3: Dry Weather Screening
- IDEP 4: Review Procedure for Receiving and Notifying EGLE of Illicit Discharges
- IDEP 5: Determining Effectiveness of IDEP

### 4.2. Upcoming Monitoring Year Goals

Future monitoring years will include various efforts within the IDEP, as presented below.

Under Activity IDEP 1, MDOT will develop an annual list of construction projects and maintenance activities which include work on the drainage system at the end of the fiscal year. This activity will continue to be completed each year of the permit cycle.

MDOT will update any outfall maps as needed throughout the permit cycle, in accordance with Activity IDEP 2. In 2022, MDOT will focus on the development of an identification system for all outfall structures.

The measurable goals under Activity IDEP 3 are the activities that were completed within the five-year permit cycle. In 2016, the desktop analysis was completed. In years 2017 through 2020, field work and data gathering was completed. The pilot project was completed in 2020, and the program results were assessed in 2021. No issues were found in the pilot project, so no further action was taken.

For Activity IDEP 4, a review of the procedure for receiving the notice of an illicit discharge shall be reviewed and updated if necessary.



Per Activity IDEP 5, illicit discharge notices and resolutions have been reported in the 2021 Annual Report. A list of the illicit discharge investigations is available in Activity IDEP 5. This is an ongoing activity and will be done for each year during the permit cycle.

## **5. Post Construction Stormwater Management for New Development and Redevelopment Projects**

MDOT's Post Construction Stormwater Management for New Development and Redevelopment Projects is a measure designed to address post construction stormwater runoff from MDOT projects and procedures for addressing post construction runoff from projects outside of the MDOT right-of-way. These goals will be achieved through structural best management practices (BMPs) designed to remove pollutants and possibly limit runoff rates from MDOT rights-of-way and other facilities.

The following section presents the six activities for Post Construction Stormwater Management for New Development and Redevelopment Projects, as outlined in the SMP. Appendix D presents each activity's table, including a description of objectives completed in 2021.

### **5.1. Activities**

The following activities are presented in table format with the current monitoring year results in Appendix D. Detailed descriptions of each activity can be referenced in the SMP.

- Post Construction 1: Structural BMP Mapping
- Post Construction 2: BMP Maintenance Requirements
- Post Construction 3: Selection and Application of BMPs
- Post Construction 4: Water Quality and Channel Protection Compliance
- Post Construction 5: TMDL Compliance
- Post Construction 6: Drainage Manual Update
- Post Construction 7: Site Plan Reviews for Projects

### **5.2. Upcoming Monitoring Year Goals**

Future monitoring years will include several efforts within Post Construction Stormwater Management, as presented below.

Under Activity Post Construction 1, the map of all known BMPs in the state has been updated and included in this report. Furthermore, MDOT plans to utilize the process for communicating newly constructed BMPs to the Stormwater Program Manager during 2022.

Per Activity Post Construction 2, MDOT will review the maintenance activity guidelines in 2022. It will be a focus for each year to develop maintenance procedures for new structural BMPs and notify appropriate staff of these procedures.

Under Activity Post Construction 3, MDOT has developed a BMP selection tool which has been distributed to MDOT designers. For 2022, it is a goal to continue to issue staff guidance with the selection tool and focus on developing maintenance procedures for structural BMPs.

Activity Post Construction 4 involves complying with performance standards for water quality and water quantity. The BMP selection tool developed in Activity Post Construction 3 was distributed to MDOT designers and it is a goal for 2022 to continue to test this tool for future projects. Furthermore, for existing structural BMPs, MDOT will continue to document their modification, replacement, or enhancement.

Activity Post Construction 5 includes the review of projects which discharge to water bodies with TMDLs. To comply with this activity, MDOT has developed a BMP selection tool which uses an interactive mapping system showing where MDOT trunklines cross 303(d) listed water bodies. This will make designers aware if their project discharges to a water body with a TMDL that they must meet these requirements. MDOT will continue to review all future projects using this tool.

Activity Post Construction 6 discusses periodically updating the drainage manual. Instead of updating the drainage manual, MDOT has decided to create a supplementary document which discusses post-construction BMP design in further detail. In the upcoming year, 2022, continuing to work on this document will be a focus.

Activity Post Construction 7 outlines the goals of having initial site plans of post-construction stormwater BMPs being reviewed by MDOT stormwater staff. This activity will be a focus for 2022.

## **6. Construction Stormwater Runoff Control**

Per the Permit, MDOT is required to establish and maintain a Soil Erosion and Sedimentation Control program. Appropriate MDOT staff are trained and certified under this program. MDOT continually educates contractors about its Soil Erosion and Sedimentation Control program (SESC), as well, on a project by project basis using the information discussed at preconstruction meetings.

The following section presents the Construction Stormwater Runoff Control activity as outlined in the SMP. Appendix E presents the activity table, including a description of objectives completed in 2021.

### **6.1. Activities**

The following activities are presented in table format with the current monitoring year results in Appendix E. Detailed descriptions of each activity can be referenced in the SMP.

- Construction 1: Review of Stormwater Runoff QAQC Protocol

### **6.2. Upcoming Monitoring Year Goals**

The efforts related to Activity Construction 1 will be a focus for 2022. These efforts include reviewing and updating the QAQC protocol for construction stormwater control and issuing staff guidance.

## 7. Pollution Prevention / Good Housekeeping

The goal of the Pollution Prevention and Good Housekeeping program is to prevent or reduce pollutant runoff from MDOT operations and properties to the MEP. Facilities covered under this measure include: MDOT offices, bridge facilities, maintenance garages, central repair, welcome centers, rest areas, roadside parks, and scenic turnouts.

The following section presents the four Pollution Prevention / Good Housekeeping activities as outlined in the SMP. Appendix F presents each activity's table, including a description of objectives completed in 2021.

### 7.1. Activities

The following activities are presented in table format with the current monitoring year results in Appendix F. Detailed descriptions of each activity can be referenced in the SMP.

- Pollution Prevention 1: BMP Inspections
- Pollution Prevention 2: PIPP Audits
- Pollution Prevention 3: Maintenance Facility Inspections
- Pollution Prevention 4: Documentation of Road Maintenance Activities
- 

### 7.2. Upcoming Monitoring Year Goals

The 2022 monitoring year will include several efforts within Pollution Prevention / Good Housekeeping, as presented below.

BMPS will be inspected in 2022 under Activity Pollution Prevention 1. The findings of these inspections will be given to the Stormwater Program Manager. Recommendations will be sent to Region Operations for scheduling maintenance. The new permit requires a two-year permit cycle, as such, each structural BMP will be inspected every other year starting in 2021.

Activity Pollution Prevention 2 discusses auditing the pollution incident prevention plans every three years. Scheduled audits will continue in 2022.

In compliance with Activity Pollution Prevention 3, sixteen (16) MDOT maintenance facilities were inspected in 2021. The findings of these inspections will be given to the Stormwater Program Manager. Recommendations will be sent to the facility managers who will prioritize and schedule required maintenance

The objective for Activity Pollution Prevention 4 is to provide for continued street sweeping and catch basin

cleanout, following maintenance performance guidelines.

## REFERENCES

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MDOT, 2021. Stormwater Management Plan. Michigan Department of Transportation.  
[https://www.michigan.gov/documents/MDOT\\_MS4\\_Chapter\\_00\\_Phase\\_I\\_SWMP\\_91675\\_7.pdf](https://www.michigan.gov/documents/MDOT_MS4_Chapter_00_Phase_I_SWMP_91675_7.pdf)

# Appendix A – Public Education Activities

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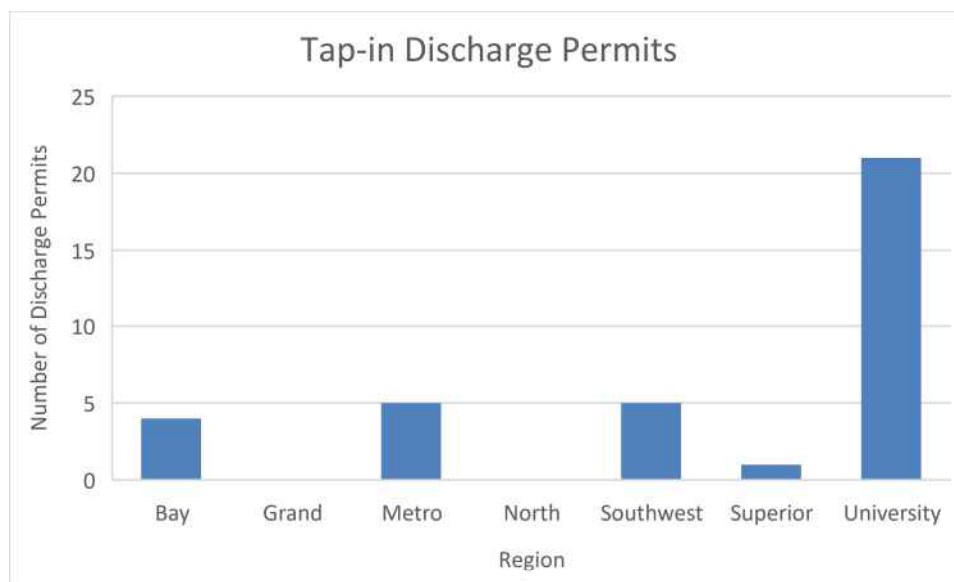


ACTIVITY EDUCATION 1: CONVERT LANSING INFORMATION CENTER TO WEB-BASED STORMWATER LIBRARY	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure:</b> Education/ Outreach <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>• ADMINISTRATION1: Program Assessment and Reporting</li> <li>• EDUCATION 2: Update MDOT Public Website</li> </ul>
OBJECTIVE	
Convert the current physical information center to a web-based archive containing stormwater-related materials for training and educating the job-related public including video, reference manuals and publications.	
DESCRIPTION	
Converting the existing, physical library to an online archive will increase ease of accessibility for MDOT employees and the job-related public. The library is to be comprised of informational materials to support activities performed for the MDOT Stormwater Management Plan.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>• Complete conversion from physical to web-based library</li> <li>• Track the web page traffic and number of content downloads</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
The existing, physical stormwater library housed in Lansing will be converted to an online database, available on the MDOT Stormwater Website.	Materials transferred to the online, public website by year 2020.
<b>Annual Assessment:</b> This task saw no action due to COVID and a lack of access to the physical stormwater library in the building.	
A list of stormwater-related materials will be updated quarterly on the MDOT Stormwater Public Web Site.	List of updates provided quarterly to the region stormwater and IDEP coordinators
<b>Annual Assessment:</b> Added the 2020 annual report, new permit, and SMP to the MDOT stormwater webpage. Stormwater contacts were updated to reflect staffing changes in 2021.	
Quarterly notices will be made in the Monday Memo to advertise the stormwater-related library material.	Number of "Monday Memo" articles issued relating to the stormwater program.
<b>Annual Assessment:</b> 2 Monday report memo articles were created in 2021.	
MDOT Staff to participate in the Southeast Michigan Green Infrastructure (GI) team to share relevant information to the job-related public via the MDOT Stormwater Public Website.	Staff participating in the team will provide materials to be posted on the MDOT Stormwater Public Website to the Aquatic Resource Specialist quarterly
<b>Annual Assessment:</b> No meetings were held in 2021.	

ACTIVITY EDUCATION 2: UPDATE WATERSHED STEWARDSHIP INFORMATION ON MDOT PUBLIC WEBSITE	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure</b> : Education/ Outreach <b>Statewide or Urbanized Area</b> : Statewide <b>Implemented in Regions</b> : All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>EDUCATION 1: Lansing Information Center Conversion</li> </ul>
OBJECTIVE	
Information pertaining to watershed stewardship currently available that is pertinent to the general, traveling public will be maintained and kept available for public use and access. Information to be updated quarterly will focus on job-related activities specific to MDOT employees. A comment form will also be developed to provide feedback on the website and available information.	
DESCRIPTION	
MDOT will update the public information website about the Phase II stormwater program. The website provides general information about watershed stewardship practices as well as links to pertinent stormwater-related materials. This information will be maintained and monitored to report website usage. Updated information will focus on job-related activities relevant to MDOT.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Track internal and external website traffic</li> <li>Track number of SWMP document downloads on the MDOT stormwater public website.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
The MDOT Stormwater Public Web Site will be updated quarterly with the most recent MDOT stormwater information and news relevant to the job-related and traveling public.	Updates to be tracked by the Stormwater Program Manager.
<b>Annual Assessment:</b> The MDOT public stormwater page contacts section was updated in 2021 to reflect changes in staffing that deal with stormwater related issues. It contains current contact information for the stormwater program manager, support staff, as well as the region stormwater and IDEP coordinators.	
A stormwater-related contact will be developed for inclusion on the MDOT Stormwater Public Web Site.	Contact will appear on the MDOT Stormwater Website and be forwarded to the Stormwater Program Manager.
<b>Annual Assessment:</b> See above comment.	
Comments received via contact link will be reviewed and addressed, as necessary. The comments will be archived to track the change in public awareness and behavior resulting from the implementation of the Public Education Program.	Comments will be addressed as necessary as determined by the Technology Manager and the Stormwater Program Manager
<b>Annual Assessment:</b> An email address was created in 2016 to allow for public comment and questions regarding the MDOT stormwater program on the contacts page. To date, there have been no public inquiries.	

<b>ACTIVITY EDUCATION 3: UPDATE STORMWATER MANAGEMENT BROCHURES</b> <b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure :</b> Education/ Outreach <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>EDUCATION 2: MDOT Stormwater Website</li> </ul>
<b>OBJECTIVE</b>	
Further the public knowledge on stormwater and how MDOT manages stormwater through informative brochures.	
<b>DESCRIPTION</b>	
Informative brochures currently exist on MDOT's Stormwater website and are also distributed at events such as job fairs and various community outreach events. These brochures will be updated to contain up to date information about stormwater management.	
<b>ANNUAL REPORTING</b>	
<ul style="list-style-type: none"> <li>Track completion of brochure updates</li> <li>Track number of downloads from website</li> </ul>	
<b>MEASURABLE GOALS</b>	
<b>MEASURABLE GOAL</b>	<b>MEASURE OF ASSESSMENT</b>
Review and update existing brochures relating to stormwater management.	To be posted on the MDOT stormwater website.
<b>Annual Assessment:</b> No updates were made to brochures in 2021.	
Continue to distribute brochure materials at community events, job fairs, and other relevant events.	To be distributed at various event.
<b>Annual Assessment:</b> No public events were held due to Covid.	

<b>ACTIVITY EDUCATION 4: REVIEW EDUCATION MATERIALS DISTRIBUTED WITH TAP-IN/DISCHARGE PERMIT APPLICATIONS AND UPDATE/DEVELOP TRACKING SYSTEM FOR TAP-IN PERMITS</b>  <b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure :</b> Education/Outreach <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment &amp; Reporting</li> <li>IDEP 4: Procedure for Receiving &amp; Notifying EGLE of Illicit Discharges &amp; Actions Taken</li> </ul>
OBJECTIVE	
Education materials inform applicants of acceptable discharges into the MDOT drainage system, and also of the potential negative impacts to water quality from unacceptable or illegal discharges and ways to mitigate these impacts. A tracking system will enable MDOT to keep better track of those who have tap-in permits.	
DESCRIPTION	
Preparing education materials for typical development activities connecting to MDOT facilities. Established and implemented procedures for distributing these materials.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Track quantity of permit applications/educational materials distributed.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review educational materials included in the tap-in/discharge permit application.	Items that need to be improved, as determined by the review process, will be given to the permit workgroup.
<b>Annual Assessment:</b> This goal was completed in 2021.	
Incorporate review comments into education materials included in the tap-in/discharge permit application.	Updated materials will be distributed to the new permit applicants.
<b>Annual Assessment:</b> This goal was completed in 2021.	
Distribute education materials to 100% of tap-in/discharge permit applicants.	MDOT Permitting Staff to follow up with applicants to ensure information was received.
<b>Annual Assessment:</b> Educational materials were distributed throughout the permit cycle. There were 36 tap-in discharge permits 2021. The breakdown of these numbers by region are available in the figure on the following page.	
Review the adequacy of the procedure for distributing materials.	MDOT Permitting Staff to meet with MDOT Stormwater Staff to discuss necessary changes to education materials distributed to permit applicants.
<b>Annual Assessment:</b> The procedure for distributing the materials was not changed in 2021.	



**Figure A1 – 2021 Tap-In Permits Issued By Region**

<b>ACTIVITY EDUCATION 5: UPDATE EXISTING MODULES AND DEVELOP MS4 TRAINING MODULE FOR DESIGNERS</b>  <b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure :</b> Training Activities <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>IDEP 4: Notify EGLE of Illicit Discharges</li> </ul>
OBJECTIVE	
Educate the job-related public about the Stormwater Management Program, focusing on design.	
DESCRIPTION	
Use the four 15 minute MDOT stormwater program training modules to train Lansing and Region/TSC staff and contract agencies. <ul style="list-style-type: none"> <li>Module One: Introduction to SW Management</li> <li>Module Two: Best Management Practices</li> <li>Module Three: Maintenance Considerations</li> <li>Module Four: Illicit Discharge &amp; Maintenance</li> <li>A new module on MS4's for all MDOT staff</li> </ul>	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Track training attendance.</li> <li>Track contract agencies receiving modules.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review and update modules to pertain up to date information relevant for designers. Once updated, modules will be added to the MDOT training database (On-Track) to track individual employee training. Training completion shall be included in employee performance evaluations. The first update will add illicit discharge reporting and notification information to Training Module Four.	Modules to be updated annually and confirmed by the MDOT Stormwater Program Manager
<b>Annual Assessment:</b> In 2016, a Municipal Separate Storm Sewer System (MS4) training module was developed. This module was created as an overview of MS4's, how MDOT complies with MS4 requirements, and guidance for designers on stormwater management. Creating this module was the first step for MDOT in developing updated versions of existing training modules and feedback on this module will be considered in development of these other modules, as well. No additional modules were completed in 2021.	
Determine specifically who will be trained with the stormwater modules. All new employees shall be trained within the first year. All staff shall be trained once per permit cycle. Maintenance and construction staff with stormwater responsibilities will be trained to follow the illicit discharge notification procedure with the MS4 Training Module.	List of trained employees reported by the MDOT training coordinator to Stormwater Program Manager
<b>Annual Assessment:</b> 8 training sessions covering various stormwater topics were put on with a total of 185 people attending in 2021.	

Provide modules to contract agencies and contracting associations with a request to use the modules. Provide information through the Michigan Local Technical Assistance Program (LTAP).	Modules given to contract agencies on an as needed basis.
<b>Annual Assessment:</b> No agency requests have been reported for 2021.	

ACTIVITY EDUCATION 6: CERTIFY MDOT'S STAFF FOR PESTICIDE/FERTILIZER APPLICATIONS	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure</b> : Training Activities <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> </ul>
OBJECTIVE	
To reduce pollution entering waters of the state, statewide, that originates from pesticide and/or fertilizer applications.	
DESCRIPTION	
The existing training and certification program for pesticide/fertilizer applications will be evaluated and tracked to document performance and to prevent stormwater pollution. A turf grass management plan and soil testing for nutrients to determine appropriate fertilizer usage shall be added to the existing training. Results will be used to recommend changes if appropriate.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Track the number of individuals attending annual pesticide training.</li> <li>Track number of MDOT personnel certified as a pesticide applicator.</li> <li>Summarize evaluation and review of programs, policies, procedures and information.</li> <li>Report changes to fertilizer specifications.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
MDOT Staff applying pesticides will be trained and certified per Michigan Department of Agriculture requirements. Staff are responsible for ensuring their certification is completed every three years and they have appropriate certification documents.	List of trained employees will be provided by the MDOT training coordinator to the Stormwater Program Manager by the TSC Region offices.
<b>Annual Assessment:</b> All MDOT staff that apply fertilizer or pesticides attend a training, which is offered each year. Staff must attend training every three years to maintain their certification. There are a total of 52 MDOT staff members that are certified as pesticide applicators. Furthermore, a total of 89 MDOT employees attended the annual MDOT Virtual Vegetation Management Conference Sessions in 2021.	
MDOT Staff or Contract Agencies will follow MDOT's Standard Specifications for Construction, Sections 816 and 917 for fertilizer application practices.	Verified by MDOT Stormwater Program Manager.
<b>Annual Assessment:</b> This specification is a focus of the MDOT fertilizer and pesticide application training. In 2021, staff and agencies were in compliance with these specifications.	
Evaluate application practices and pollution prevention measures and recommend and formalize any changes if appropriate.	A task to be completed annually, as checked by the Stormwater Program Manager.
<b>Annual Assessment:</b> No changes to the protocol have been identified by the Environmental Maintenance Team.	



ACTIVITY EDUCATION 7: TRAIN STAFF RESPONSIBLE FOR ADMINISTERING PART 91 AND STORMWATER OPERATORS	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure :</b> Training Activities <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>CONSTRUCTION 1: Review QAQC Protocol for Construction Stormwater Runoff Control</li> </ul>
OBJECTIVE	
To reduce non-stormwater discharges to the MEP to receiving water bodies.	
DESCRIPTION	
The existing EGLE sponsored Soil Erosion and Sedimentation Control (SESC) training program will be attended by appropriate maintenance staff. Successful completion of the training and certification of stormwater operators will be documented.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Track total number of staff trained and certified for compliance with Part 31 and Part 91 requirements.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
MDOT Staff Responsible for Administering Part 91 and those having Decision Making Authority for SESC Plan Development or Review, Inspections, or Enforcement will receive NPDES training.	The number of trained staff reported annually to the Stormwater Program Manager
<b>Annual Assessment:</b>  <u>Number of MDOT staff trained, by region:</u>  <b>Bay</b> – 8 licensed herbicide applicators trained and attended the MDOT Virtual Vegetation Management Conference. 93 Bay Region positions were certified or recertified in CSO &/or PRD. <b>Grand</b> – 10 staff re-certified as stormwater operators, 12 staff attended MDOT annual herbicide applicator online training conference, 6 staff re-certified as SESC planning and design/ comprehensive. <b>Metro</b> – 11 staff attended SESC training. 9 staff attended SWO training. 4 staff attended pesticide training. <b>North</b> – 19 staff renewed both their Construction Stormwater Operators license and completed Plan Review & Design certifications. 7 North Region employees attended pesticide and herbicide training. 22 staff completed the Hazardous Materials & Waste Awareness (HM 181) training. <b>Southwest</b> – 22 staff attended CSW training. 4 staffed attended SESC PRD training. 48 staff attended pesticide training. <b>Superior</b> – 10 Staff attended the Virtual Vegetation Management trainings. <b>University</b> – Numerous regional personal attended the MDOT Virtual Vegetation Management Conference. <b>TSMO</b> – Staff provided 8 training sessions to various staff throughout the department in addition to addressing numerous project specific issues regarding stormwater treatment. 180 people attended the trainings in total.	

## **Appendix B – Public Involvement and Participation Activities**

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<b>ACTIVITY PUBLIC INVOLVEMENT 1: POST STORMWATER MANAGEMENT PLAN (SWMP) ON MDOT'S PUBLIC STORMWATER WEBSITE AND DEVELOP COMMENT FORUM</b>	
<b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure :</b> Education/ Outreach <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>EDUCATION 1: Convert Lansing Information Center to Web-Based Stormwater Website</li> </ul>
OBJECTIVE	
To obtain statewide comments from the public on the SMP.	
DESCRIPTION	
Establish procedures for the public notice and distribution of the draft SMP. Provide at least 30 days for public review and comment.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Track number of public comments</li> <li>Track number of downloads of the draft SMP from MDOT Stormwater website.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Post draft SMP on MDOT Stormwater Website.	Posted by due date & confirmed by Stormwater Program Manager.
<b>Annual Assessment:</b> This goal was completed in 2021.	
Distribute draft SWMP to all TSCs and Region Offices.	Posted by due date & confirmed by Stormwater Program Manager.
<b>Annual Assessment:</b> This goal was completed in 2021.	
Develop comment forum for general public to comment on publicly posted SMP.	Posted by due date & confirmed by Stormwater Program Manager.
<b>Annual Assessment:</b> This goal was completed in 2021.	
Distribute SMP to watershed and environmental organizations listed in <b>Appendix E</b> of the SMP.	Posted by due date & confirmed by Stormwater Program Manager.
<b>Annual Assessment:</b> This goal was completed in 2021.	
Distribute SMP to planning organizations state-wide that are involved with transportation planning efforts.	Comment on in Annual Report.
<b>Annual Assessment:</b> This goal was completed in 2021.	
Report and respond to public comments on SMP.	Relevant comments to be incorporated into final version of SWMP. All comments compiled in SMP <b>Appendix F</b> .

<b>Annual Assessment:</b> This goal was completed in 2021.	
Post final SMP on MDOT Stormwater Website.	Posted by due date & confirmed by Stormwater Program Manager.
<b>Annual Assessment:</b> The final SMP for the permit issued November 1, 2021 was posted on the MDOT Stormwater Website in November 2021.	

ACTIVITY PUBLIC INVOLVEMENT 2: DEVELOPMENT OF OFFSET PROGRAM INCLUDING PARTNERING WITH OTHER STATE AGENCIES, DRAIN COMMISSIONERS, AND MUNICIPALITIES	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure :</b> Education/ Outreach <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> </ul>
<b>OBJECTIVE</b>	
To expand outreach activities and gain partners to better the management of stormwater by adopting existing stormwater management practices in the state of Michigan and for off-site mitigation for redevelopment projects that cannot meet 100 percent of the performance standards.	
<b>DESCRIPTION</b>	
MDOT will encourage the partnership with other state agencies, drain commissioners and municipalities, as appropriate, in order to better the management of stormwater and maintain the vitality of Michigan's surface waters.	
<b>ANNUAL REPORTING</b>	
<ul style="list-style-type: none"> <li>List of agencies that have agreed to a partnership, or may be interested in the future.</li> </ul>	
<b>MEASURABLE GOALS</b>	
<b>MEASURABLE GOAL</b>	<b>MEASURE OF ASSESSMENT</b>
Develop list of organizations to reach out to by November 2019.	List included in Annual Report.
<b>Annual Assessment:</b> In 2019, MDOT began the process by working with multiple groups including SEMCOG, CRA, and EGLE and continued in 2020 and 2021. There has been no list developed to date.	
Develop process for establishing partnerships. SEMCOG partnership to be used as a pilot program.	Standard procedure developed & distributed to appropriate persons by Stormwater Program Manager.
<b>Annual Assessment:</b> There was no focus on establishing a pilot program for partnership development in 2021.	

<b>ACTIVITY PUBLIC INVOLVEMENT 3: IDENTIFY AND COORDINATE WITH MPOs HAVING A SWMP</b> <b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure :</b> Education/ Outreach <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>• ADMINISTRATION 1: Program Assessment and Reporting</li> <li>• POST CONSTRUCTION 3: Procedure to Select and Apply BMPs</li> <li>• POST CONSTRUCTION 6: Periodically Update Drainage Manual</li> </ul>
<b>OBJECTIVE</b>	
<p>To identify and coordinate, statewide, with MPOs having stormwater quality control programs to properly handle stormwater management issues during construction and maintenance activities.</p>	
<b>DESCRIPTION</b>	
<p>Further improve the management of stormwater by collaborating with MPOs during early coordination efforts of MDOT projects. The purpose of these efforts will be to inform and comply with local planning efforts and watershed goals.</p>	
<b>ANNUAL REPORTING</b>	
<ul style="list-style-type: none"> <li>• Track the major action environmental documents (environmental assessments and environmental impact statements) distributed to watershed groups for their comments.</li> <li>• Track responses from watersheds and environmental groups concerning areas of concern.</li> <li>• Track any early coordination meetings held with watershed and environmental groups including whether groups attend a public meeting or comment on one of the major action documents.</li> </ul>	
<b>MEASURABLE GOALS</b>	
<b>MEASURABLE GOAL</b>	<b>MEASURE OF ASSESSMENT</b>
<p>Consider watershed and environmental group input during early coordination of MDOT transportation projects.</p>	<p>In projects identified as impacting 303(d) listed water bodies or other important surface water features, MDOT will coordinate with local watershed and environmental groups.</p>
<p><b>Annual Assessment:</b> No watershed groups requested information in 2021. No correspondence was received from environmental groups regarding stormwater in 2021.</p>	

## Appendix C – Illicit Discharge Elimination Plan Activities

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ACTIVITY IDEP 1: MAINTAIN LIST OF CONSTRUCTION PROJECTS AND MAINTENANCE ACTIVITIES	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure :</b> Illicit Discharge Elimination Program Activities <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>IDEP 2: Update Maps for Outfalls in Urban Area</li> <li>CONSTRUCTION 1: Review QAQC Protocol for Construction Stormwater Runoff Control</li> </ul>
<b>OBJECTIVE</b>	
To inform interested persons of construction projects and maintenance activities which will include work on the drainage system.	
<b>DESCRIPTION</b>	
List of construction projects and maintenance activities available to the public through the MDOT website and documented in the Stormwater Annual Report.	
<b>ANNUAL REPORTING</b>	
<ul style="list-style-type: none"> <li>A list of these projects and activities will be made available on the MDOT website.</li> </ul>	
<b>MEASURABLE GOALS</b>	
<b>MEASURABLE GOAL</b>	<b>MEASURE OF ASSESSMENT</b>
Develop a list of construction projects and maintenance activities which include work on the drainage system at the end of the fiscal year.	List to be given quarterly from TSC and Region Managers to the Stormwater Program Manager
<b>Annual Assessment:</b> The MDOT public website contains 3 links that list construction projects in the state. The links cover MDOT's major road projects, the current construction projects, and future projects covered under MDOT's 5 year plan. The current construction projects are also available using the Mi Drive application. The following information is also available on the following pages: <ul style="list-style-type: none"> <li>Maintenance activities completed in 2021, in summary:               <ul style="list-style-type: none"> <li>A total of 21 litter pick up events.</li> <li>A total of 3 BMPs repaired/ maintained.</li> <li>A total of 16,000 miles of streets were swept.</li> <li>A total of 35,035 catch basins were cleaned out.</li> <li>A total of 457 catch basins were reported as being repaired.</li> <li>A total of 12 miles of ditches were reported as being cleaned out.</li> <li>A total of 179 washouts were reported as being repaired.</li> <li>A total of 187 culverts were reported as being cleaned out.</li> <li>A total of 1,500 ft of drain lead was reported as being cleaned out.</li> </ul> </li> <li>A summary of salt and sand usage for winter maintenance activities.</li> </ul>	



**Table 1. Litter Pick-Up Programs**

<b><i>Region</i></b>	<b><i>Litter Pick-Up Programs</i></b>
<i>Bay</i>	<ul style="list-style-type: none"> <li>• 3 pick-up events</li> </ul>
<i>Grand</i>	<ul style="list-style-type: none"> <li>• 3 pick-up events</li> <li>• The county road commissions crews pick up litter at least once a month</li> <li>• Grand Rapids Metro Area trash pick up contract April-October</li> </ul>
<i>Metro</i>	<ul style="list-style-type: none"> <li>• 3 pick-up events</li> <li>• 296 miles of highway roadside litter was cleaned by 146 groups through the Adopt -A-Highway program.</li> </ul>
<i>North</i>	<ul style="list-style-type: none"> <li>• 3 pick-up events</li> </ul>
<i>Southwest</i>	<ul style="list-style-type: none"> <li>• 3 pick-up events</li> </ul>
<i>Superior</i>	<ul style="list-style-type: none"> <li>• 3 pick-up events</li> </ul>
<i>University</i>	<ul style="list-style-type: none"> <li>• 3 pick-up events</li> </ul>

**Table 2. BMP Maintenance Activities**

<b><i>Region</i></b>	<b><i>BMP Maintenance Activities</i></b>
<i>Bay</i>	None reported.
<i>Grand</i>	3 aerator fountains installed for detention basins.
<i>Metro</i>	None reported.
<i>North</i>	None reported.
<i>Southwest</i>	None reported.
<i>Superior</i>	None reported.
<i>University</i>	None reported.

**Table 3. Miscellaneous Maintenance Activities for 2021**

<b>Region</b>	<b>Street Sweeping (miles)</b>	<b>Catch Basin Cleanout (#)</b>	<b>Catch Basins Repaired (#)</b>	<b>Ditch Cleanout (miles)</b>	<b>Washout Repairs (#)</b>	<b>Culvert Cleanout (#)</b>	<b>Drain Leads Cleaned (ft)</b>
<i>Bay</i>	2,038	4,915	33	7	29	-	-
<i>Grand</i>	1,180	3,246	6	5	61	-	-
<i>Metro</i>	11,109	11,991	177	-	56	-	1,500
<i>North</i>	224	3,601	212	-	-	187	-
<i>Southwest</i>	488	2,324	10	-	33	-	-
<i>Superior</i>	120	1,777	19	-	-	-	-
<i>University</i>	841	7,181	-	-	-	-	-

# STATEWIDE SUMMARY : FY 2021 County & Garage Winter Material Usage

page 1 of 2

## May Report

### Statwide Statistics YTD

#### Statewide Total Lane Miles

30122.8

#### Salt Usage per Lane Mile

13.6

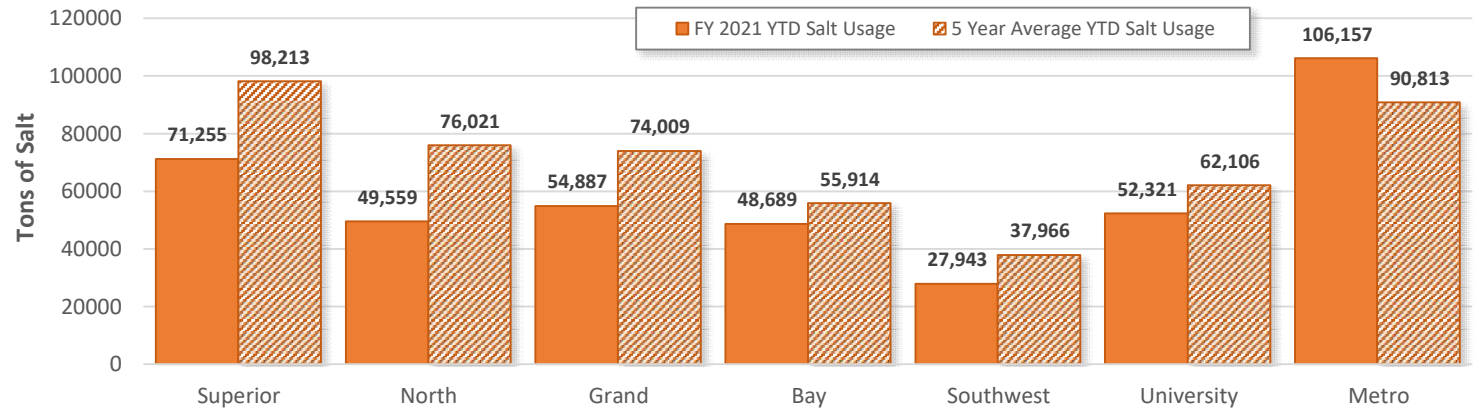
#### Liquid Usage per Lane Mile

66.3

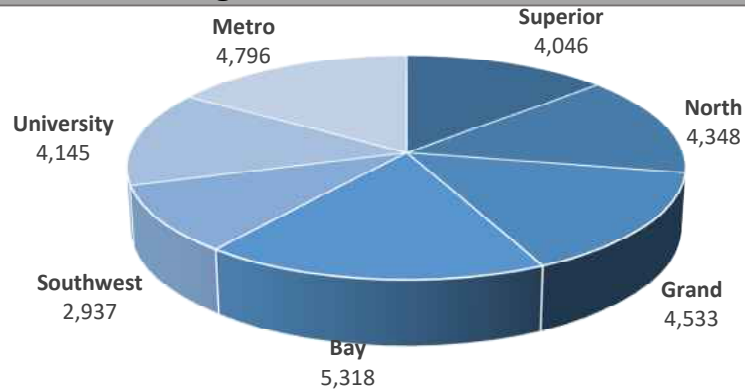
#### Sand Usage per Lane Mile

1.7

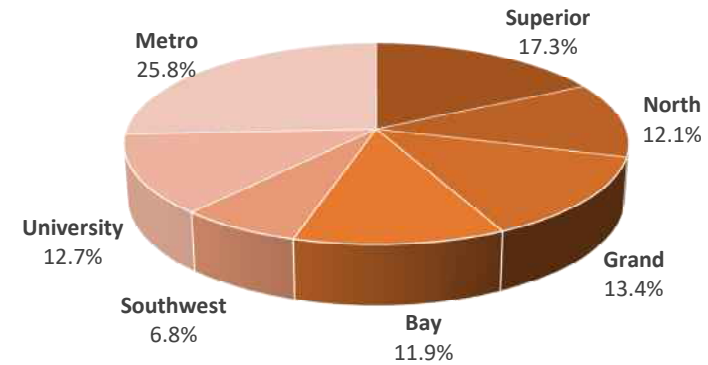
## YTD Salt Usage by Region FY 2021



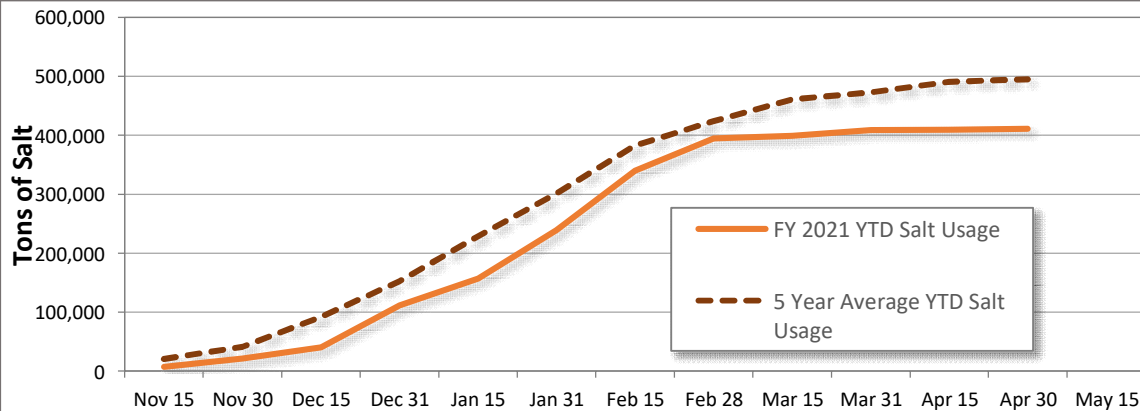
## Regions Lane Miles FY 2021



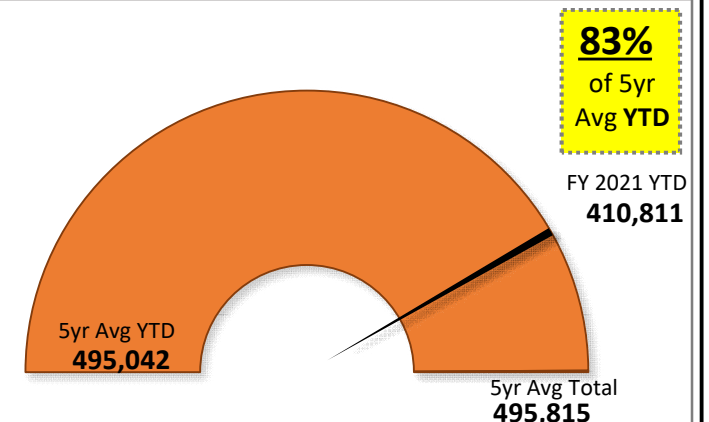
## YTD Salt Usage by Region FY 2021



## Cumulative Salt Usage FY 2021 YTD



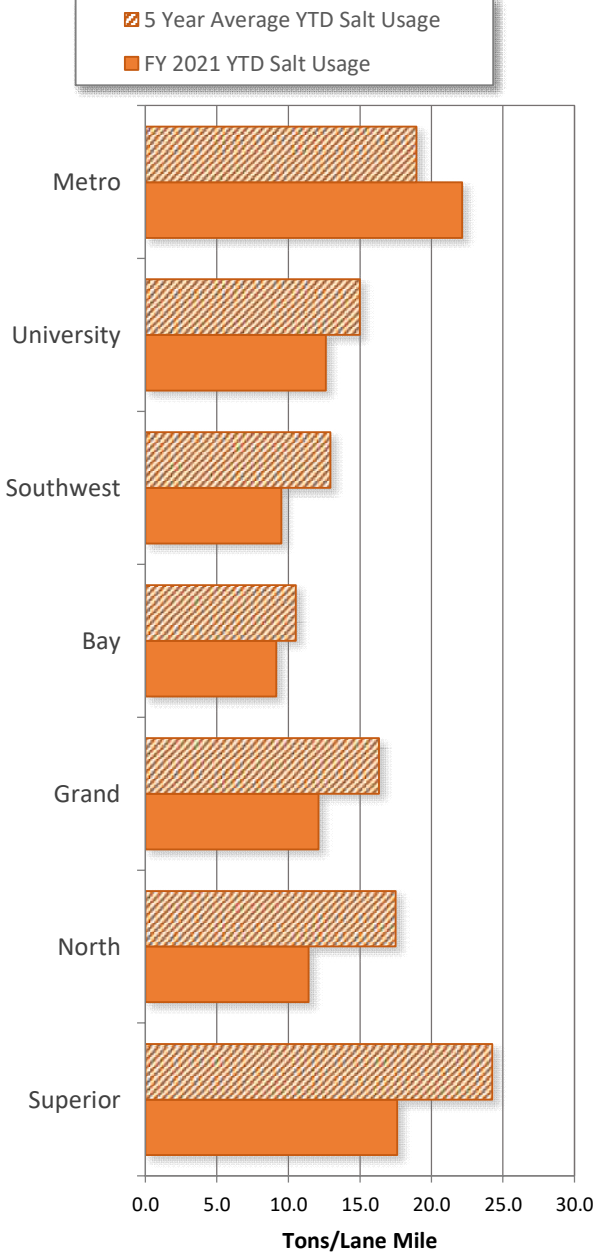
## Statewide YTD Salt Usage FY 2021 (in tons)



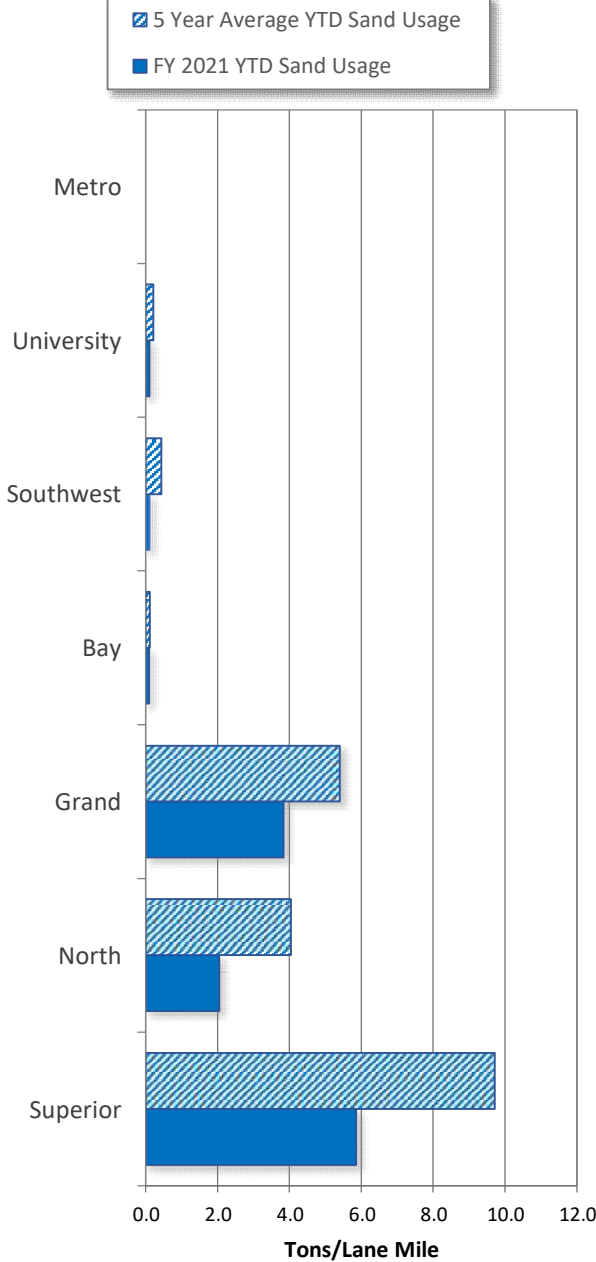
# STATEWIDE SUMMARY : FY 2021 County & Garage Winter Material Usage

page 2 of 2

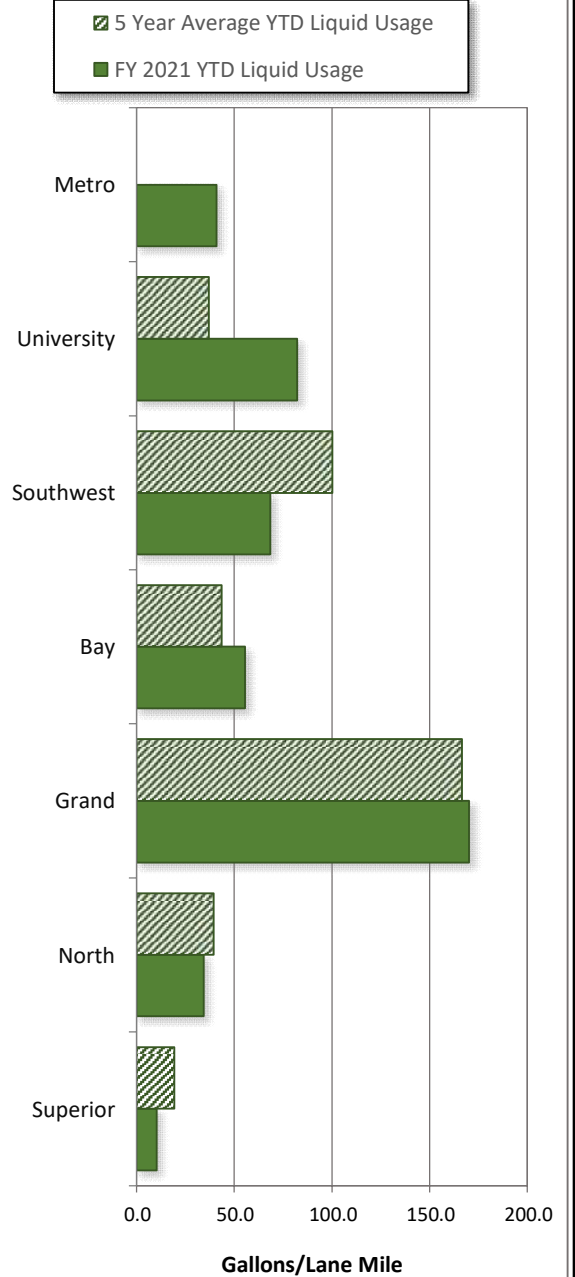
**Salt Usage FY 2021 YTD per lane mile**



**Sand Usage FY 2021 YTD per lane mile**

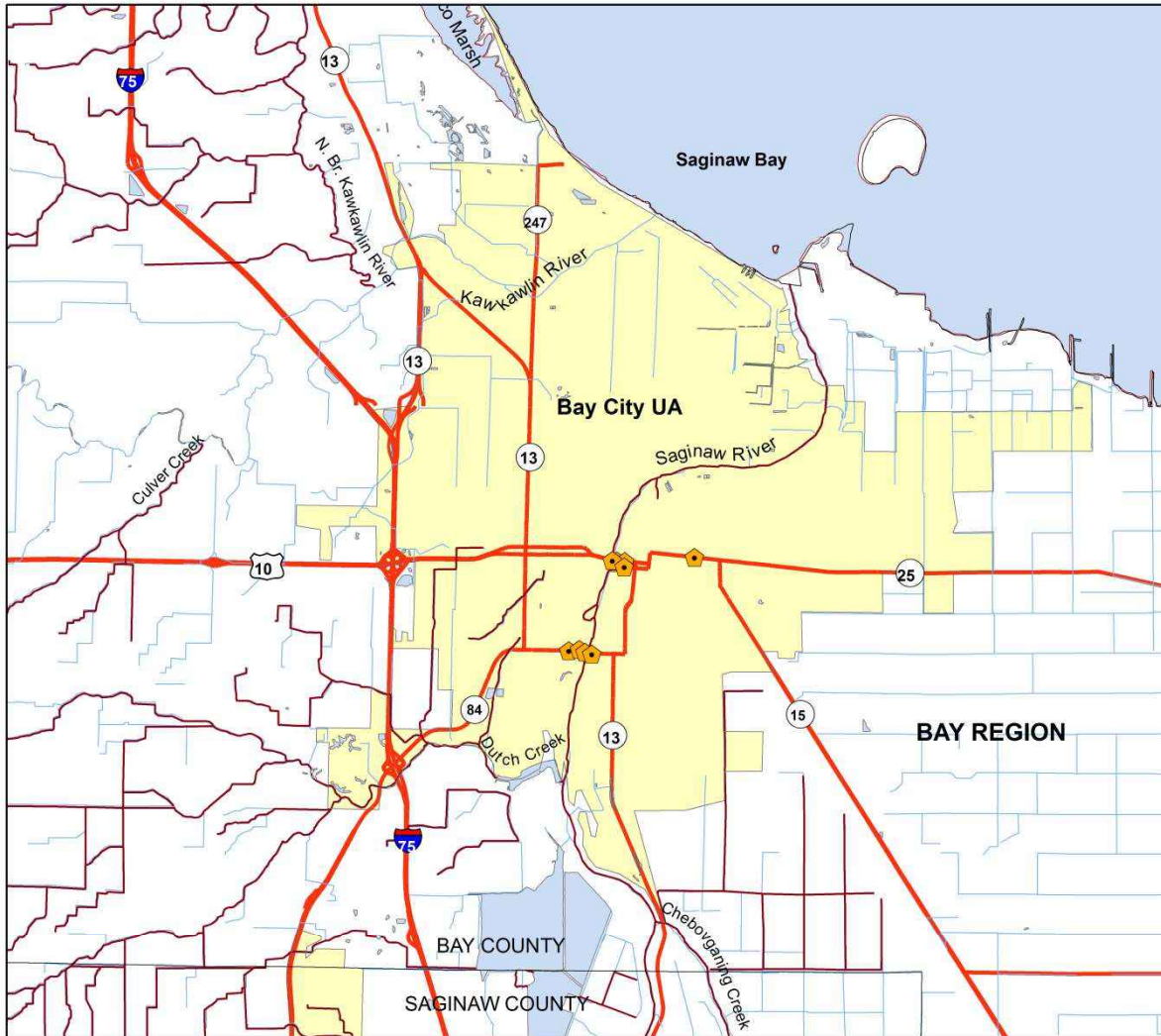


**Liquid Usage FY 2021 YTD per lane mile**



ACTIVITY IDEP 2: DEVELOP MAPPING SCHEDULE AND UPDATE MAPS FOR OUTFALLS IN URBAN AREAS	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure :</b> Illicit Discharge Elimination Program Activities <b>Statewide or Urbanized Area:</b> Urbanized Area <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>IDEP 1: Maintain List of Active Construction Projects and Major Maintenance Activities</li> </ul>
OBJECTIVE	
To develop current outfall maps and schedule for updating in the future.	
DESCRIPTION	
To develop an annual mapping schedule and complete mapping of outfalls in MDOT right-of-way in urbanized areas including MDOT roads crossing 303(d)-listed water bodies and other non-impaired water bodies. Known outfalls will be mapped based on existing survey maps.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Track completed maps and updated outfalls</li> <li>Report physical location where up-to-date storm sewer system maps are available</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Map outfalls in MDOT right-of-way in urbanized areas.	To be reported annually to the Stormwater Program Manager
<b>Annual Assessment:</b> Maps of outfalls at stream crossings over or within 300 feet of impaired waters of the state within urbanized areas based are on field inspection of top priority outfalls. Maps of outfalls at stream crossings over waters of the state within urbanized areas that are not field screened are based on a GIS analysis. Detailed storm sewer maps are also available at each MDOT Region office.	
Update known outfall maps annually and include in the annual progress report.	Maps given to the Stormwater Program Manager by the consultant annually.
<b>Annual Assessment:</b> Maps created in 2016 are available on the following pages and will be updated throughout the permit cycle as more outfalls are identified.	
MDOT to provide permanent identification for all outfall structures.	ID will be documented and tracked by MDOT Stormwater Program Manager
<b>Annual Assessment:</b> MDOT utilizes a special provision that requires all new or reconstructed outfalls under MDOT ownership to be labelled as such. In 2021, 12 projects utilized this special provision.	

## Bay City Urbanized Area



### Legend

- County Lines
- ~ Impaired Waterbodies
- ~ Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library



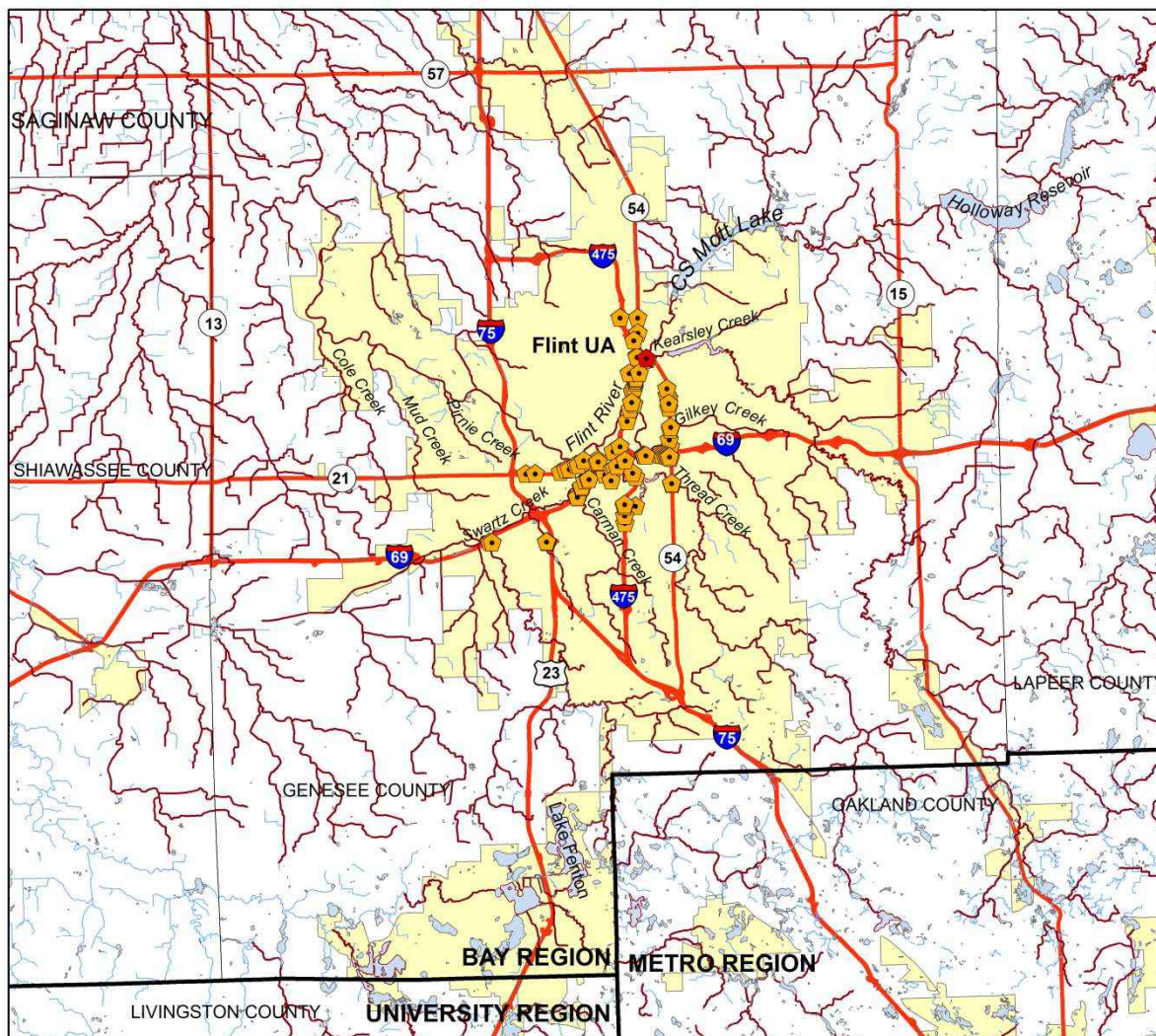
0 0.75 1.5 3 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**



## Flint Urbanized Area



### Legend

- County Lines
- ~ Impaired Waterbodies
- ~ Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
- Estimated Outfalls

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

N

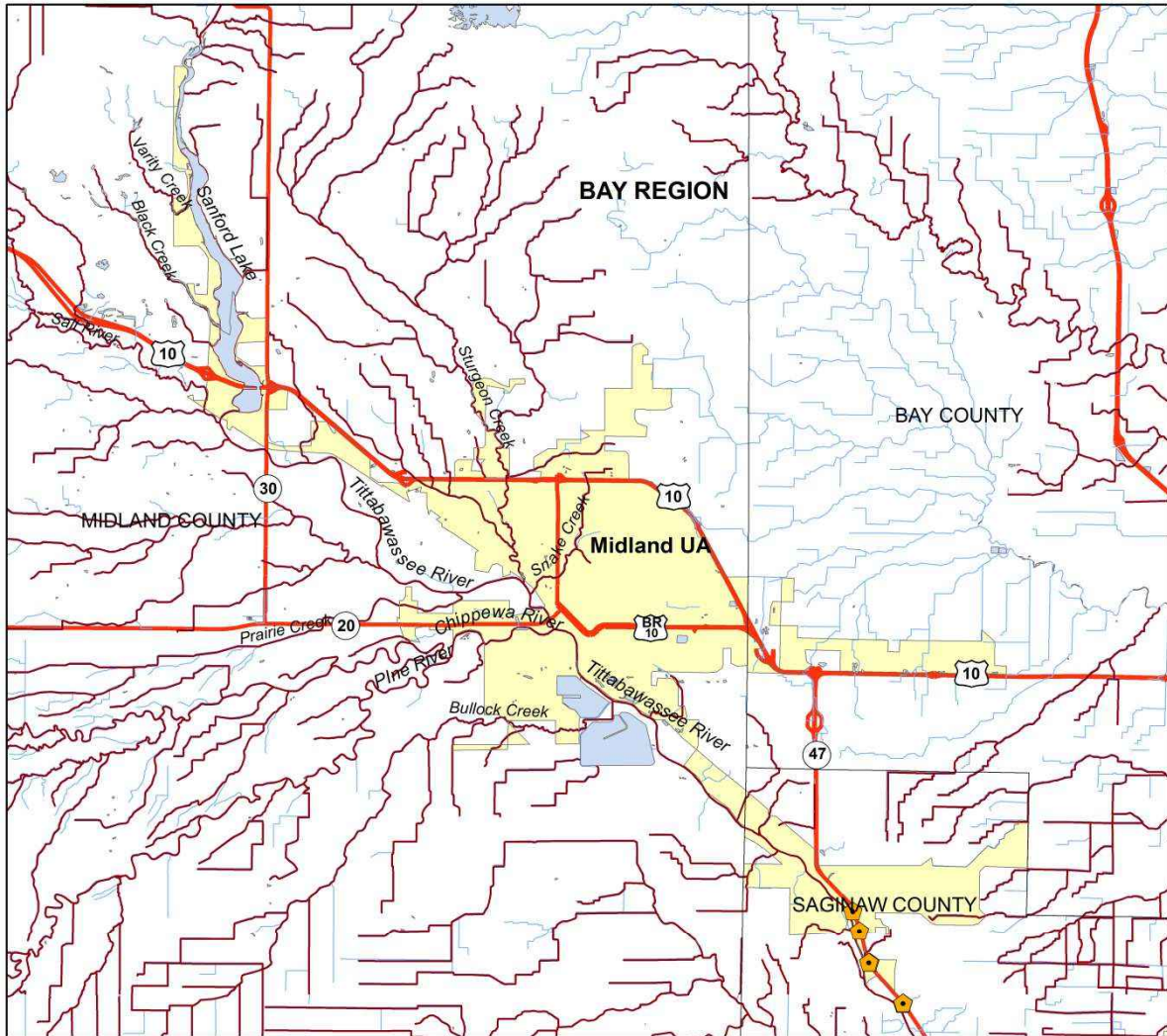


0 1.5 3 6 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**

## Midland Urbanized Area



### Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

N



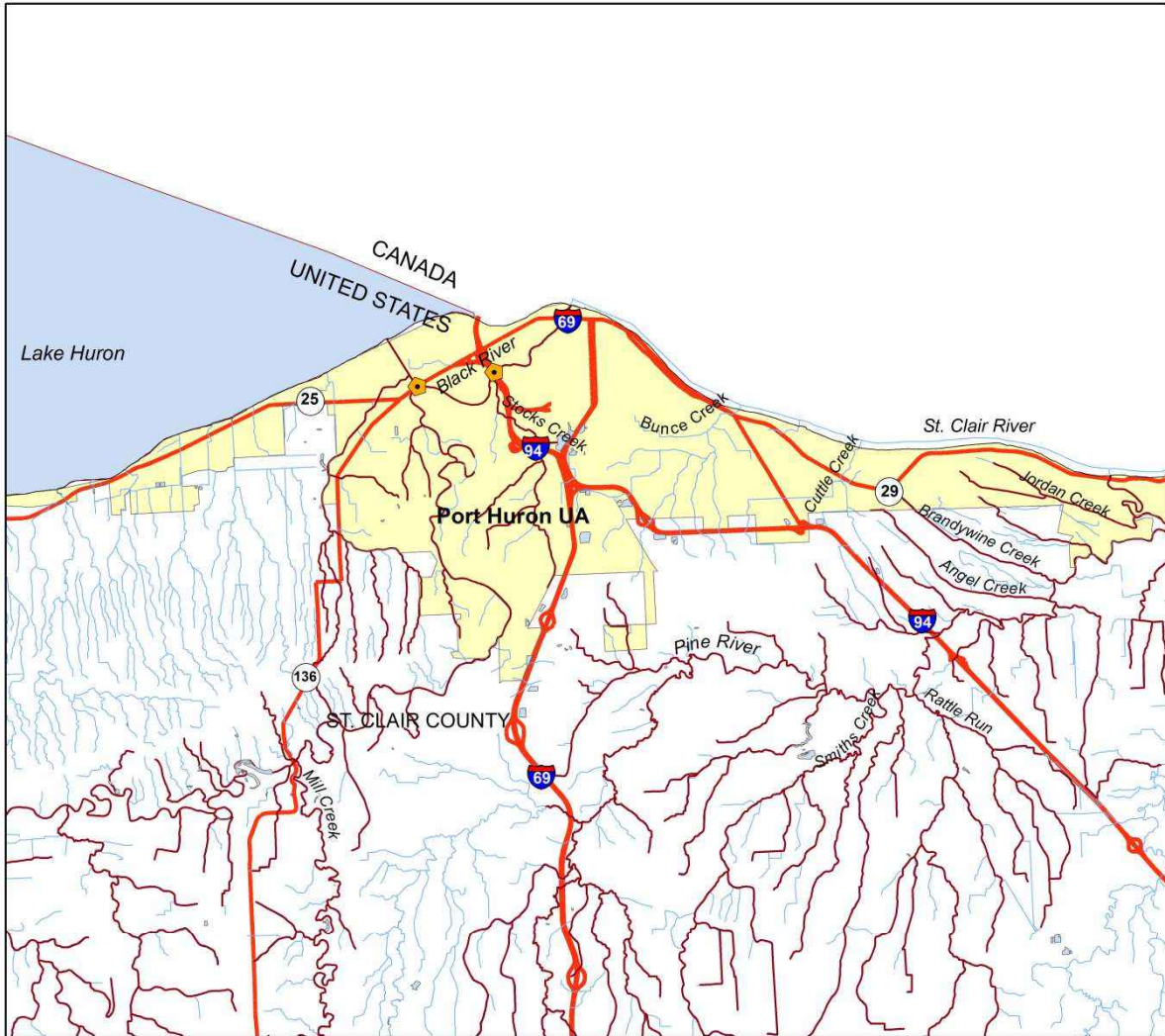
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Designer: CSM  
Date: 6/2/2016

**AECOM**



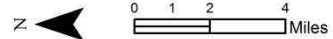
## Port Huron Urbanized Area



### Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

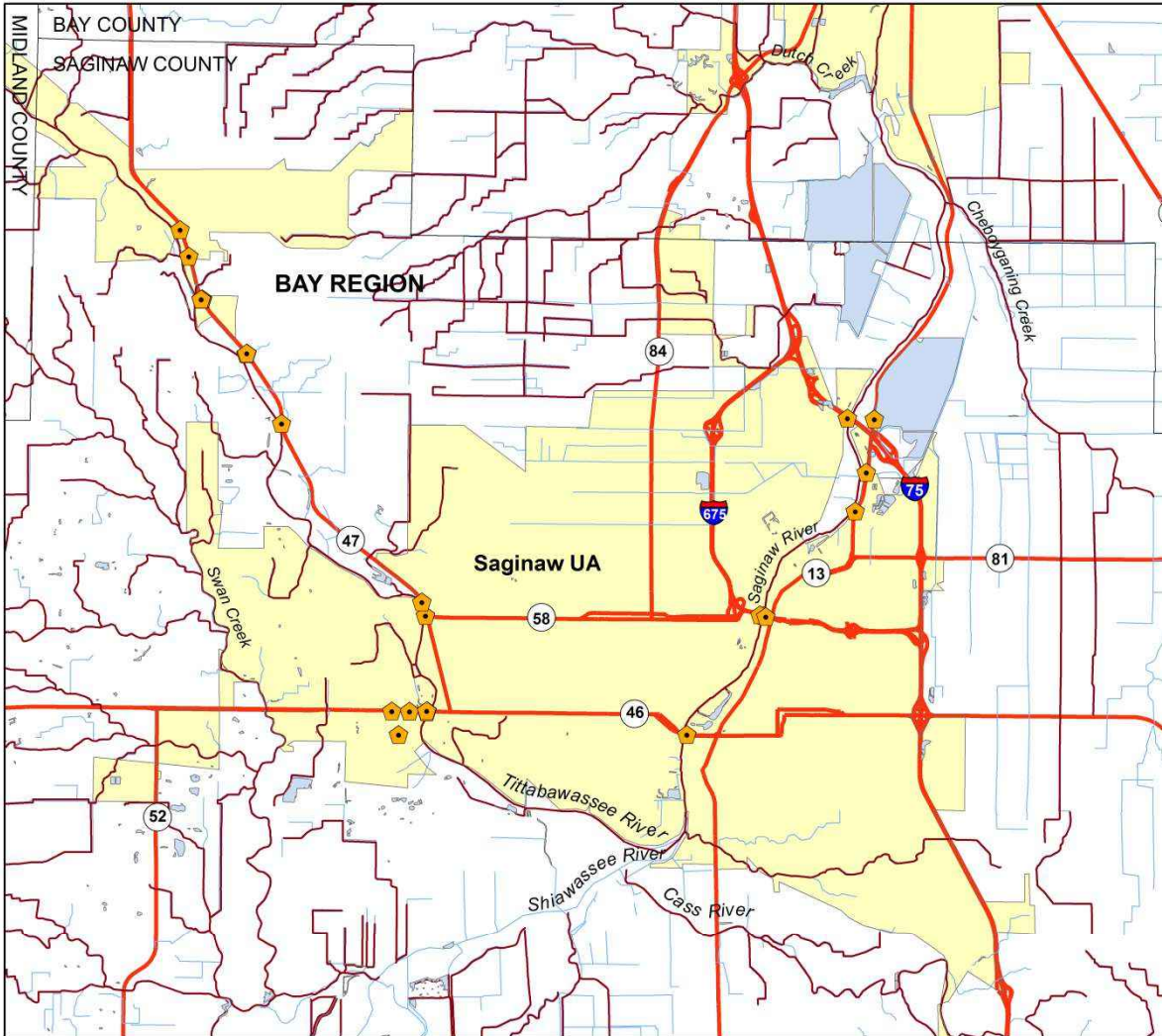
-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library



Designer: CSM  
Date: 6/2/2016

**AECOM**

## Saginaw Urbanized Area



### Legend

- County Lines
- ~ Impaired Streams
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library



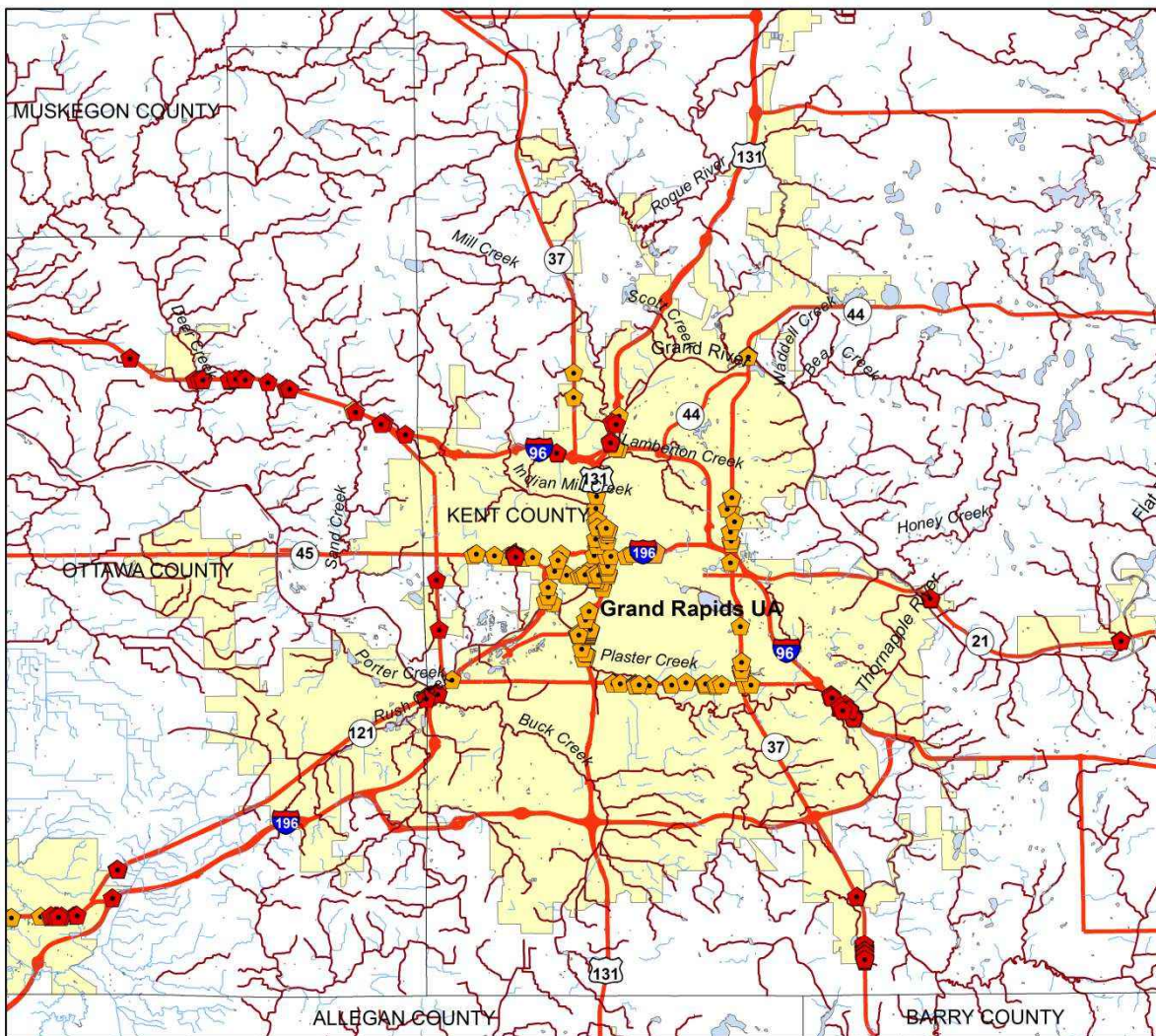
0 1 2 4 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**



## Grand Rapids Urbanized Area



### Legend

- County Lines
- ~ Impaired Waterbodies
- ~ Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
- ◆ Estimated Outfalls

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

N

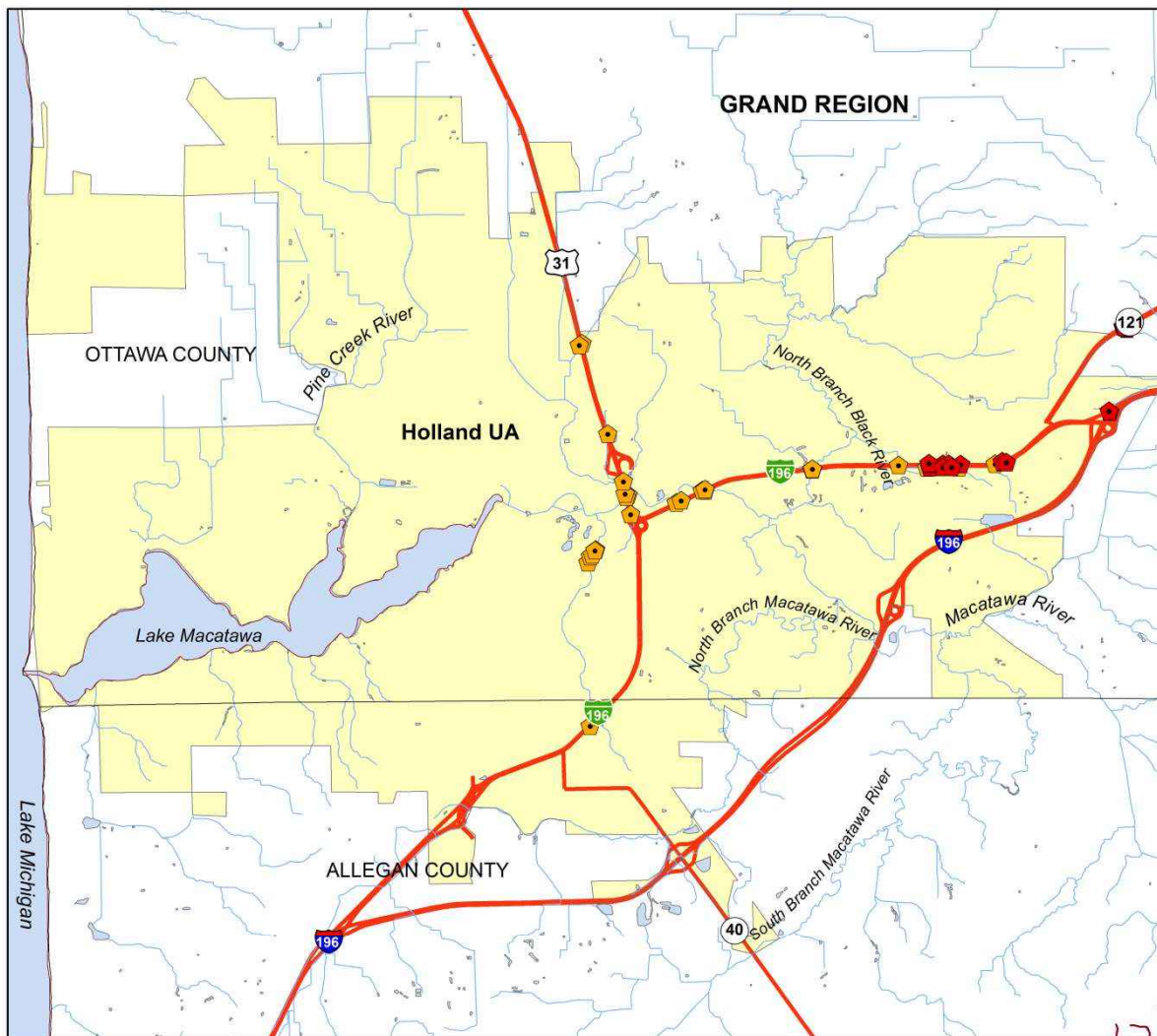


0 2 4 8 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**

## Holland Urbanized Area



### Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
- Estimated Outfalls

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library



0 0.5 1 2 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**



## Muskegon Urbanized Area



### Legend

- County Lines
- ~ Impaired Waterbodies
- ~ Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- ◡ IDEP Field Investigation Locations
- ◡ Estimated Outfalls

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

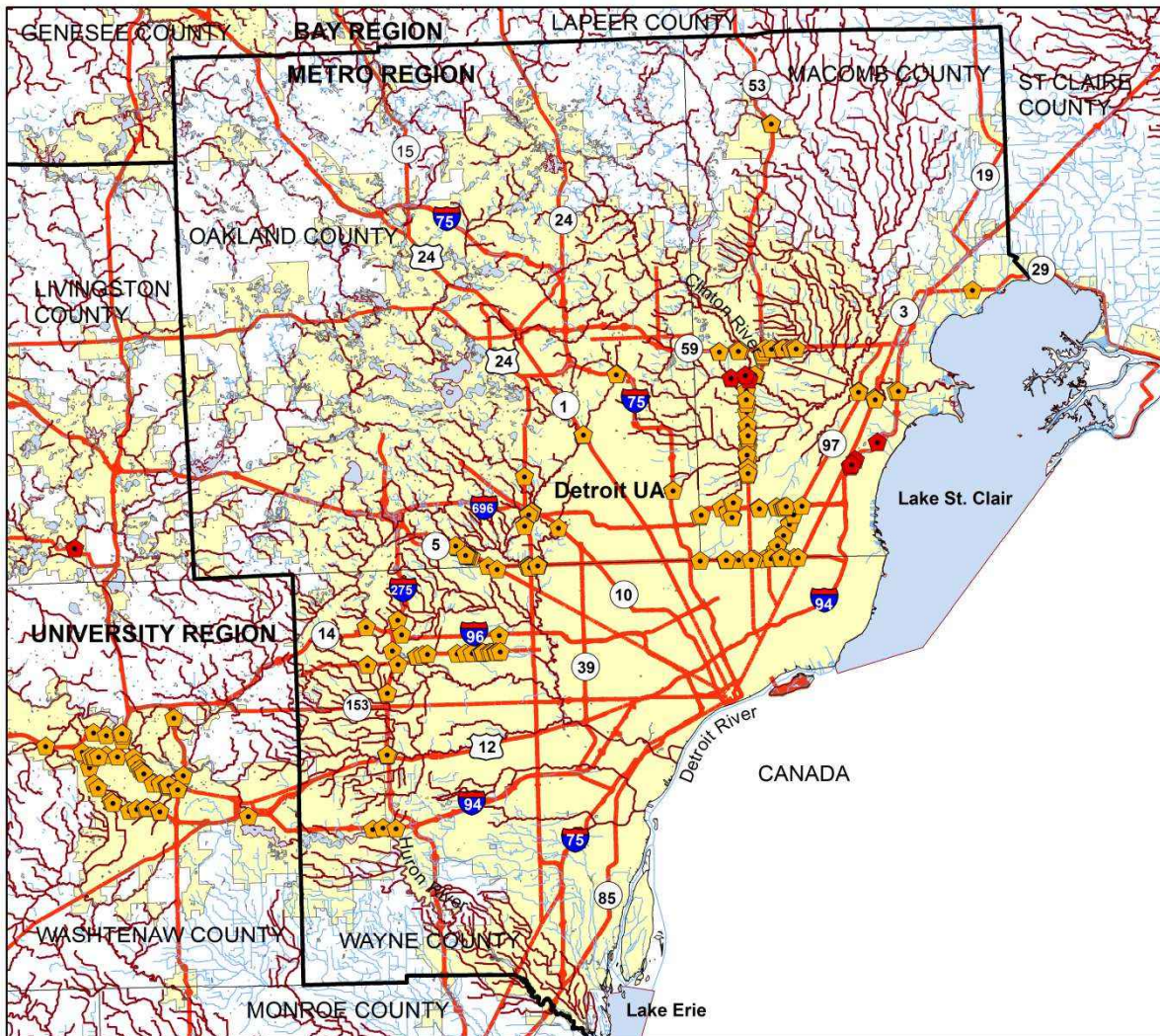


0 1 2 4 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**

## Detroit Urbanized Area



### Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
- Estimated Outfalls

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

N



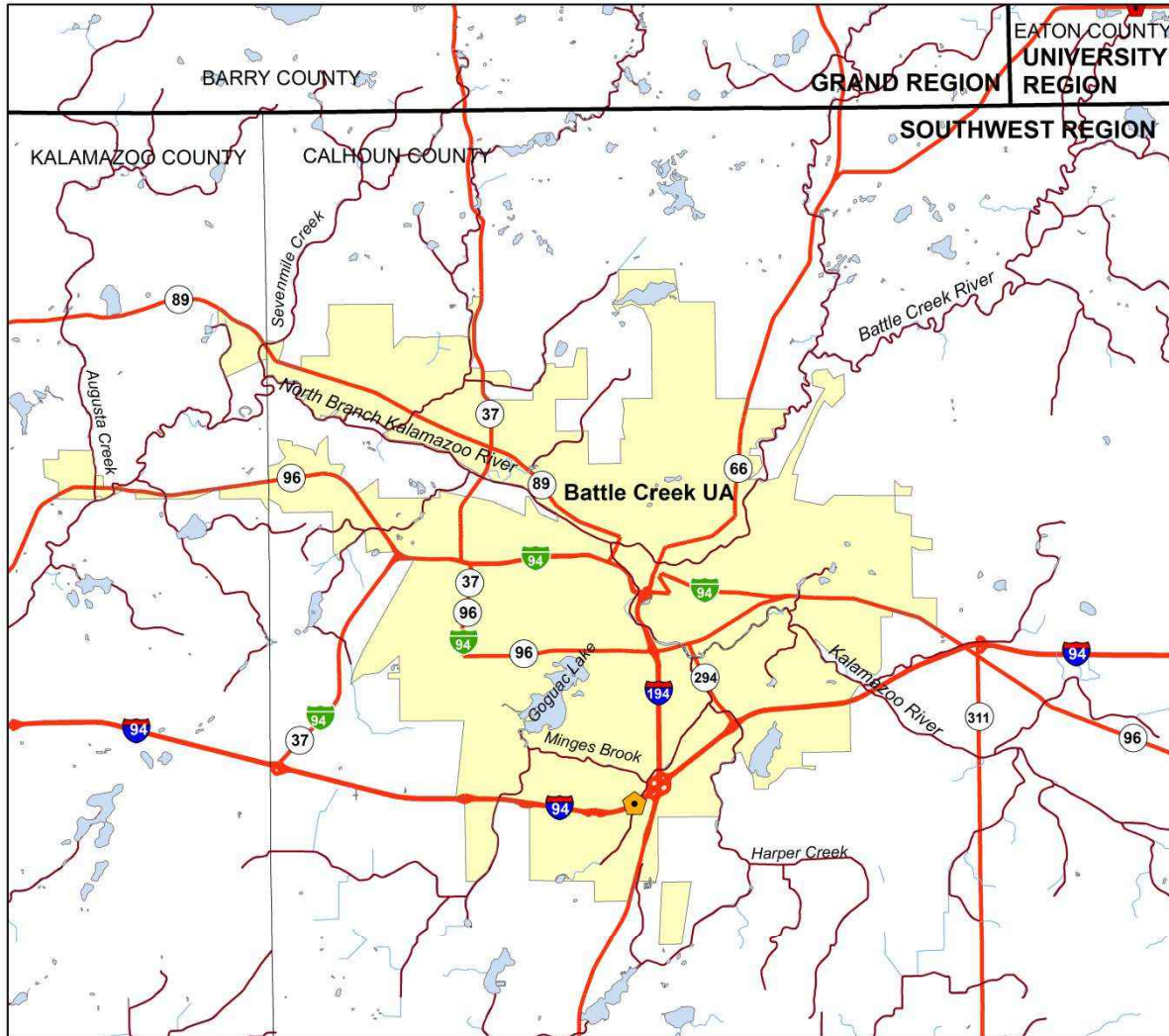
0 3.5 7 14 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**



## Battle Creek Urbanized Area



### Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library



0 1 2 4 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**

## Benton Harbor-St. Joseph Urbanized Area



### Legend

- County Lines
- ~ Impaired Waterbodies
- ~ Streams and Rivers
- ~ Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library



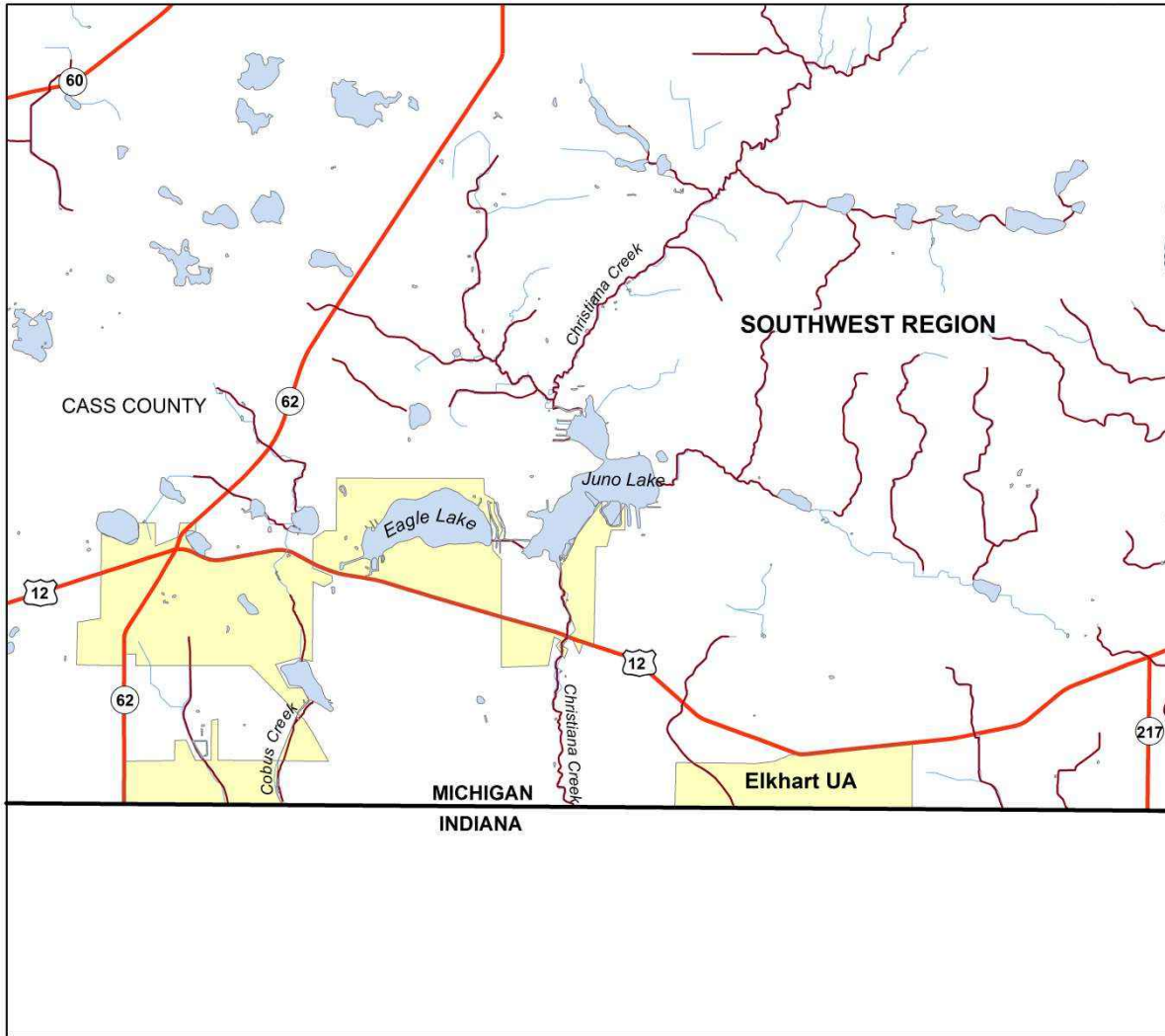
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Designer: CSM  
Date: 6/2/2016

**AECOM**

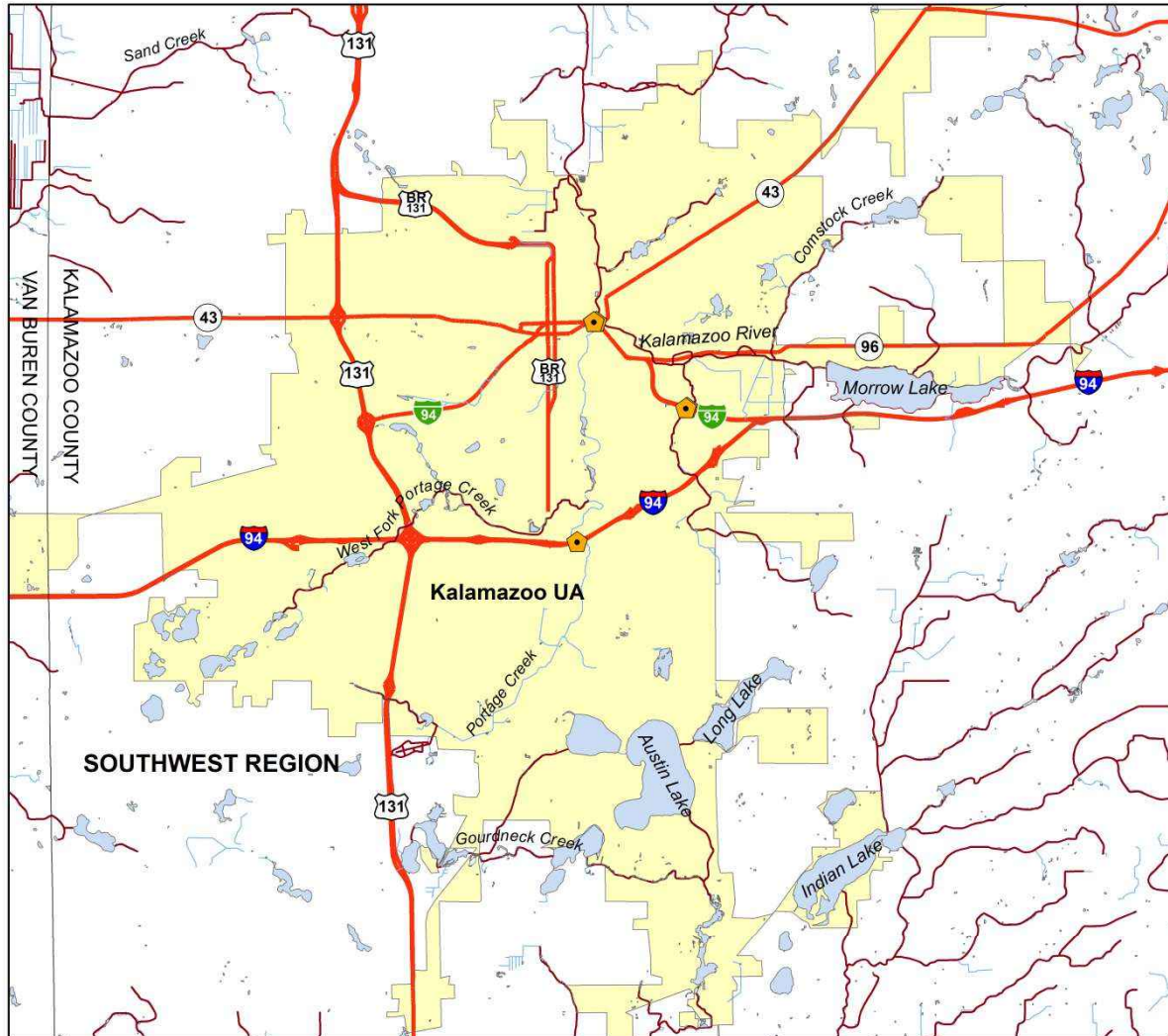



## Elkhart Urbanized Area



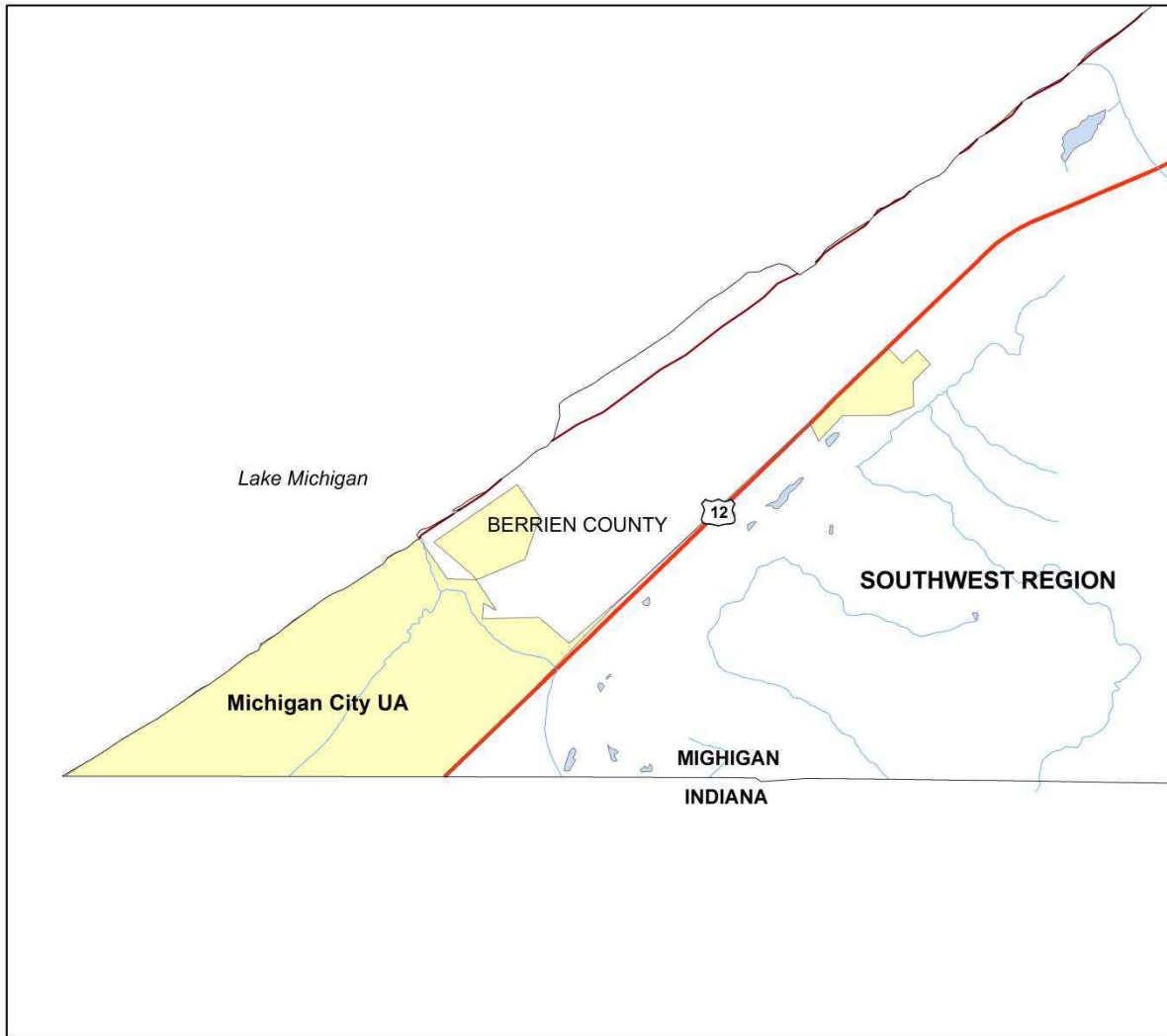
<p><b>Legend</b></p> <ul style="list-style-type: none"> <li>County Lines</li> <li>Impaired Waterbodies</li> <li>Streams and Rivers</li> <li>Lakes</li> <li>MDOT Roads</li> <li>Urbanized Area</li> <li>No IDEP Investigation</li> </ul>	<ul style="list-style-type: none"> <li>-Michigan county line data was obtained from the Michigan Center for Geographic Data Library</li> <li>-MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library</li> <li>-Urbanized Area status is based on 2010 census data.</li> <li>-Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset</li> <li>-Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library</li> </ul>	<div data-bbox="1068 1465 1349 1577"> <p>N</p> <p>0 0.5 1 2 Miles</p> </div> <div data-bbox="1040 1654 1377 1703"> <p>Designer: CSM Date: 6/2/2016</p> </div>
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## Kalamazoo Urbanized Area



<p><b>Legend</b></p> <ul style="list-style-type: none"> <li>County Lines</li> <li>Impaired Waterbodies</li> <li>Streams and Rivers</li> <li>Lakes</li> <li>MDOT Roads</li> <li>Urbanized Area</li> <li>IDEP Field Investigation Locations</li> </ul>	<ul style="list-style-type: none"> <li>-Michigan county line data was obtained from the Michigan Center for Geographic Data Library</li> <li>-MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library</li> <li>-Urbanized Area status is based on 2010 census data.</li> <li>-Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset</li> <li>-Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library</li> </ul>	<div data-bbox="1031 1459 1339 1575"> <p>N</p> </div> <div data-bbox="1006 1648 1339 1701"> <p>Designer: CSM Date: 6/2/2016</p>  </div>
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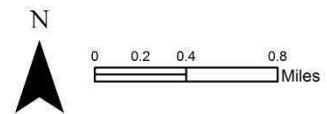
## Michigan City Urbanized Area



### Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- No IDEP Investigation

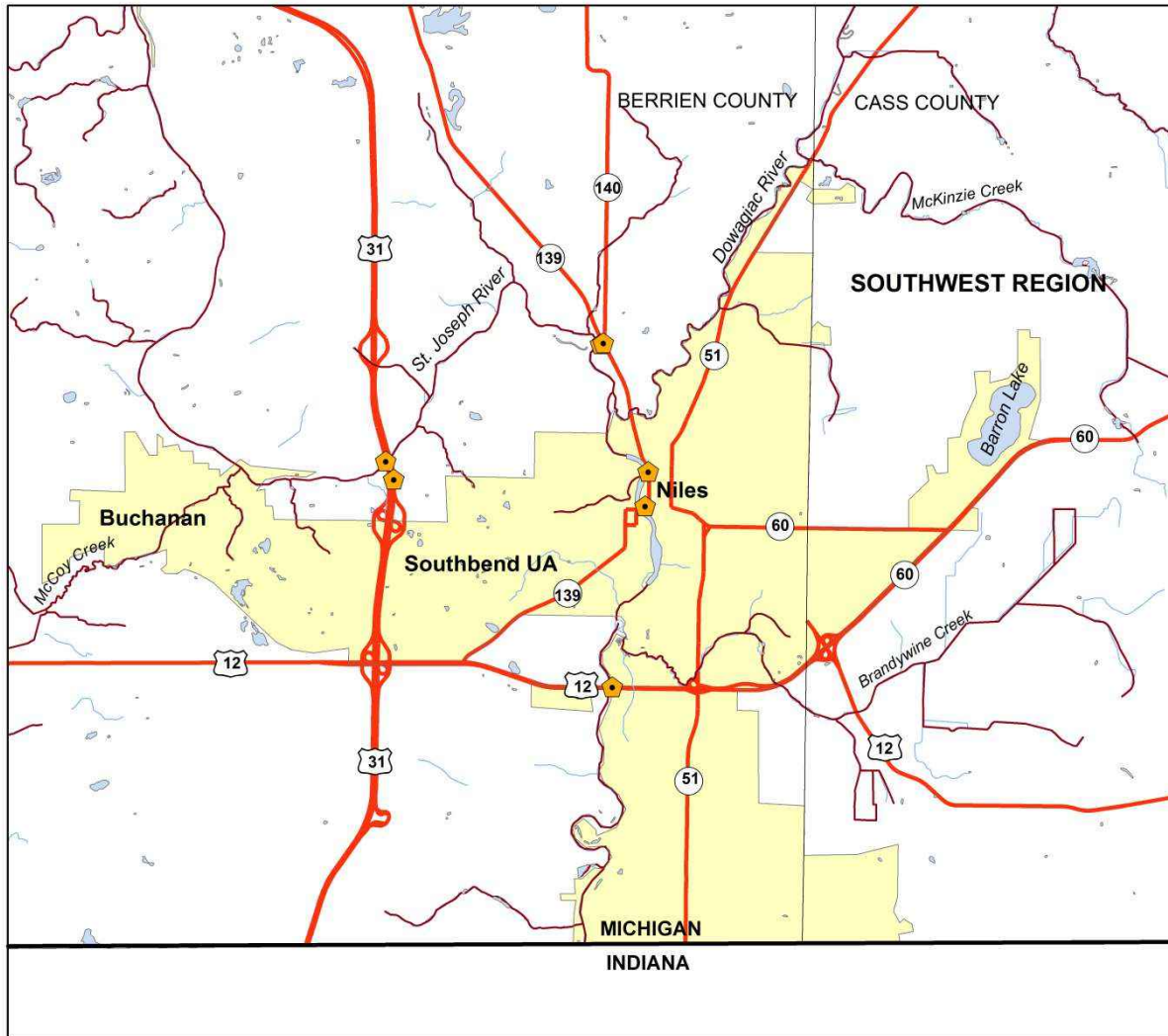
-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library



Designer: CSM  
Date: 6/2/2016

**AECOM**

## South Bend Urbanized Area



### Legend

- County Lines
- ~ Impaired Waterbodies
- ~ Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- ⬠ IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library



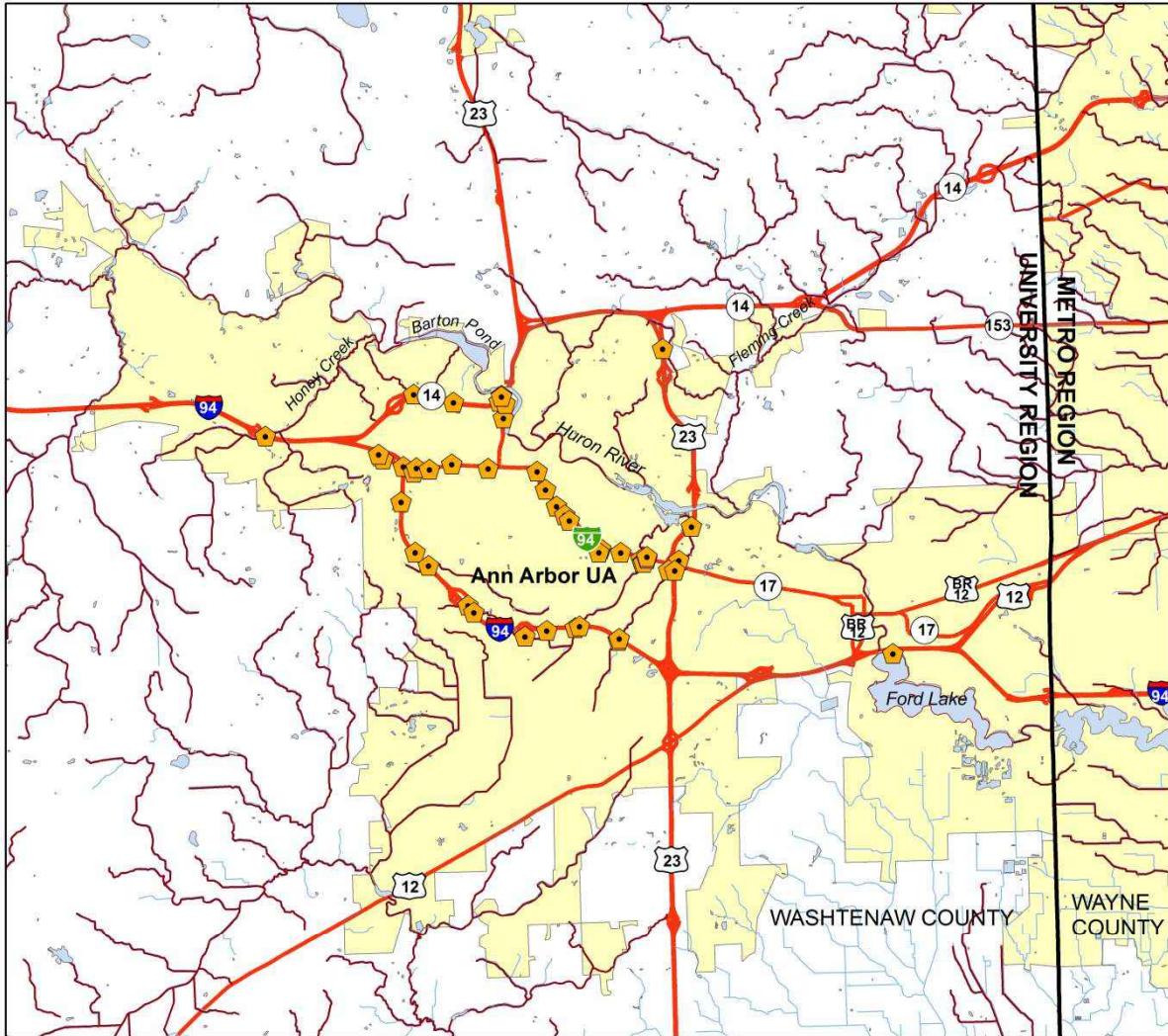
0 0.5 1 2 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**



## Ann Arbor Urbanized Area



### Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

N

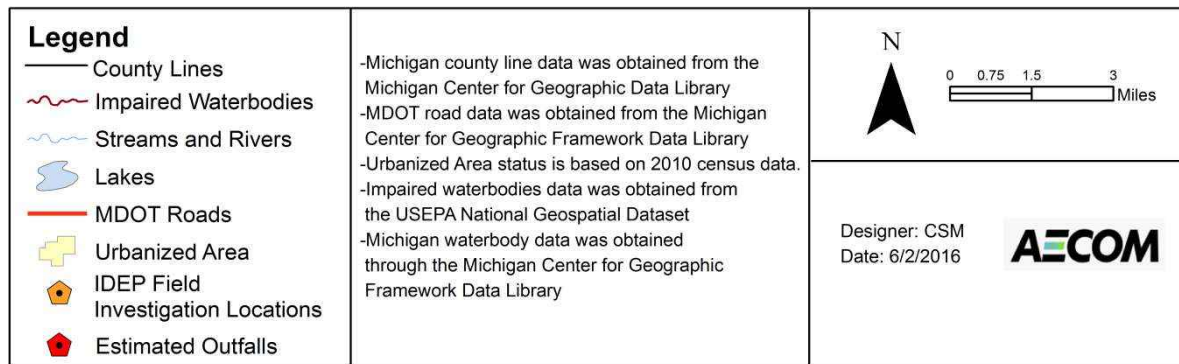
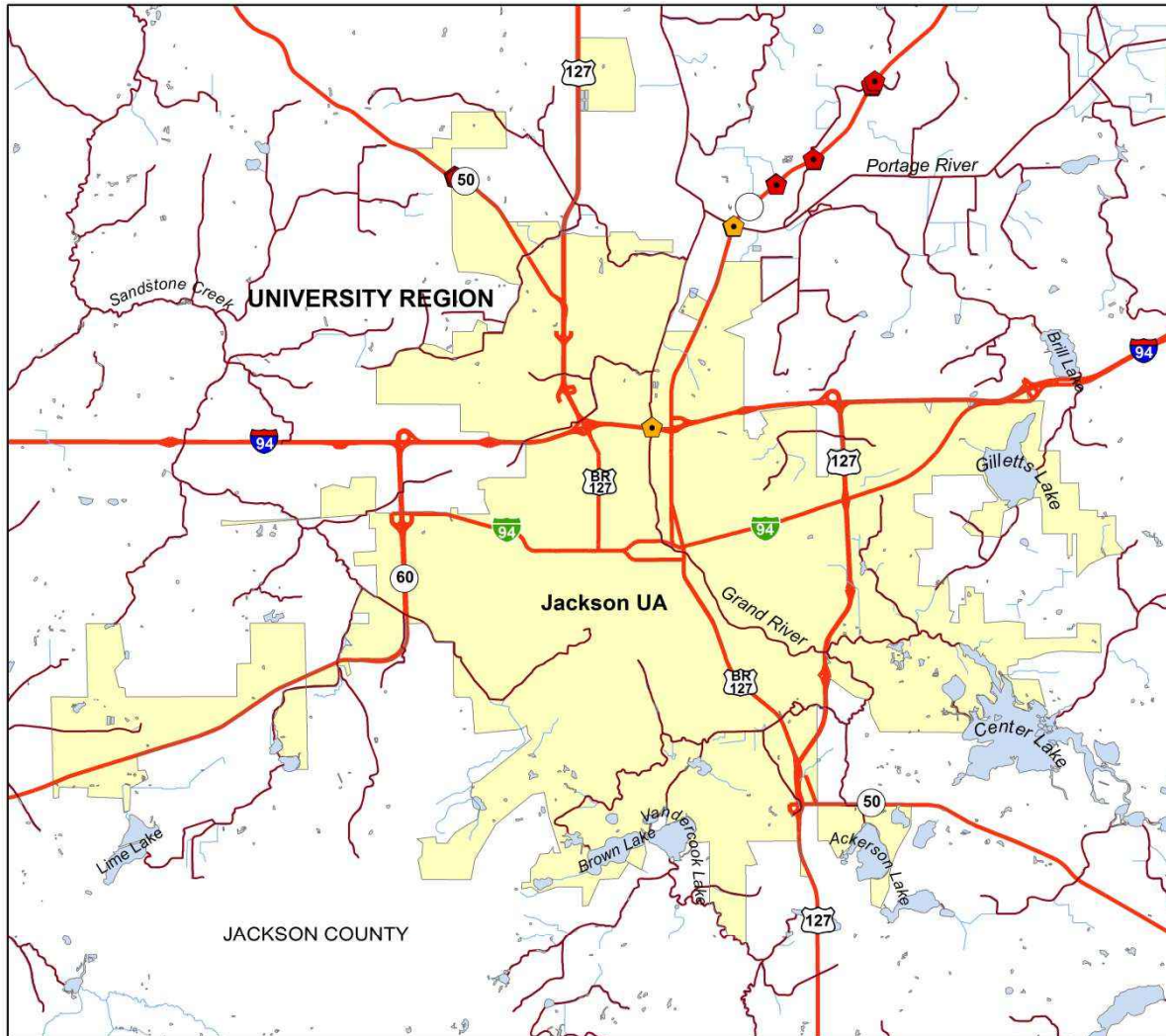


0 1 2 4 Miles

Designer: CSM  
Date: 6/2/2016

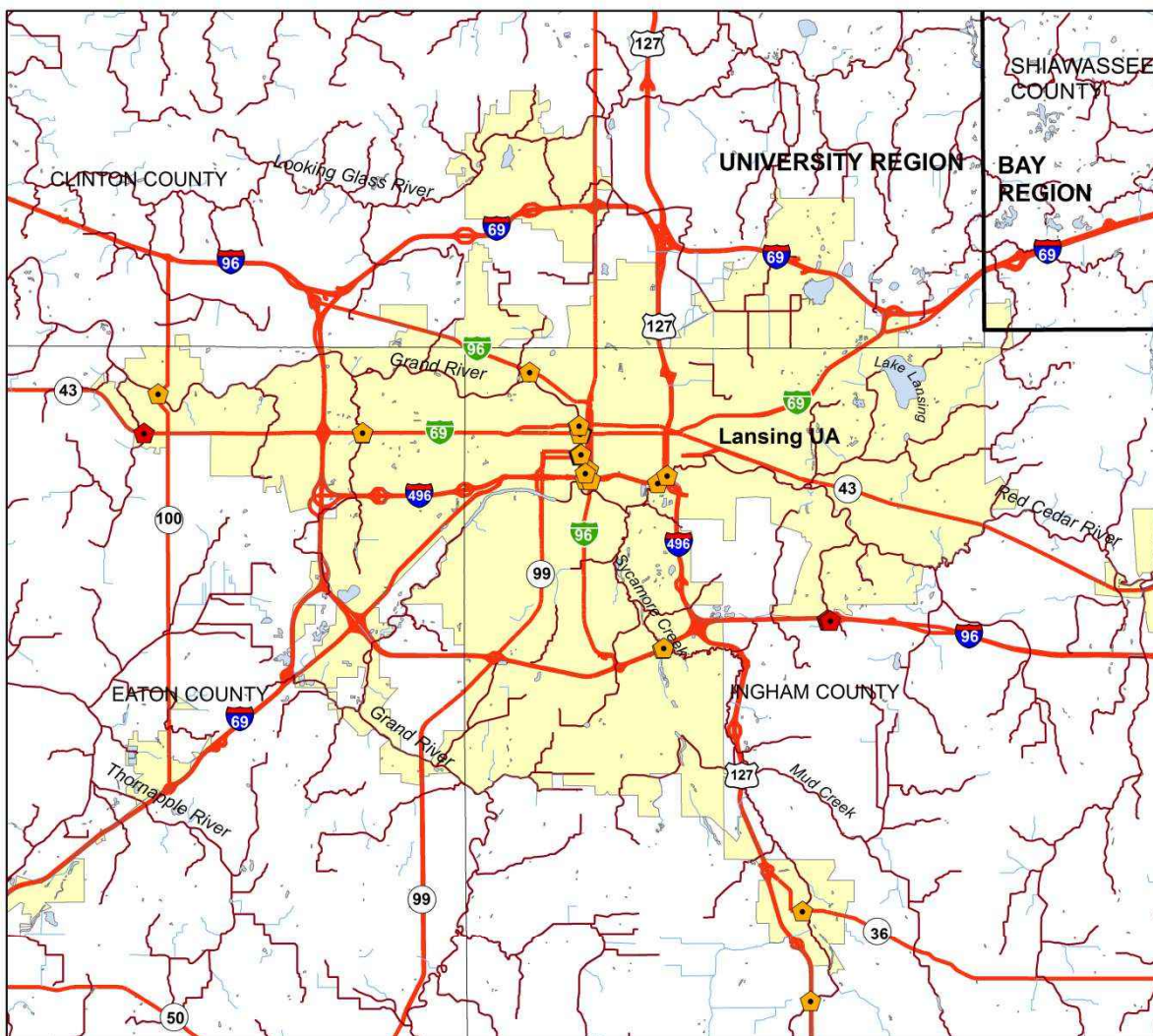
**AECOM**

## Jackson Urbanized Area





## Lansing Urbanized Area



### Legend

- County Lines
- ~ Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
- Estimated Outfalls

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

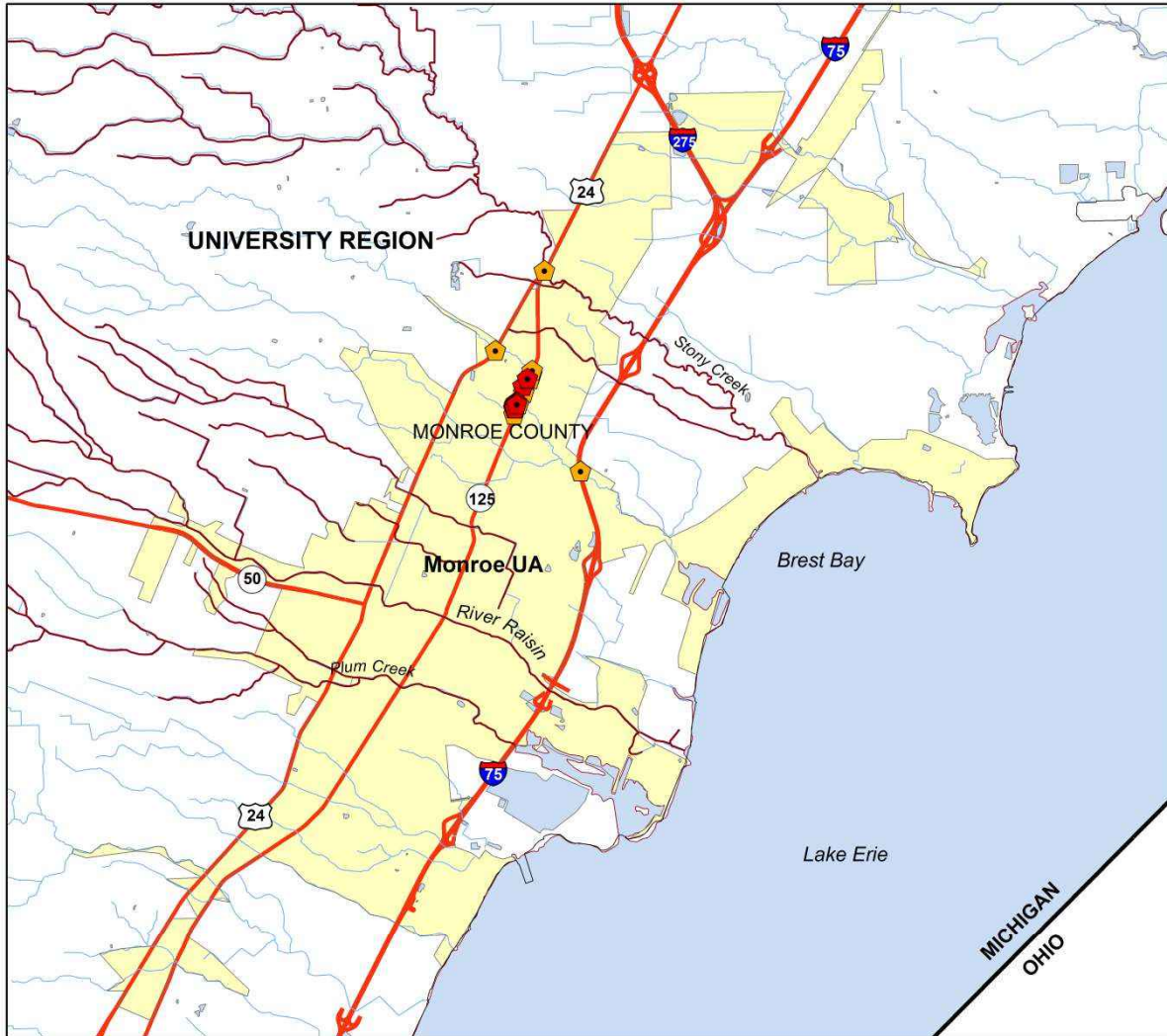


0 1.25 2.5 5 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**

## Monroe Urbanized Area



### Legend

- County Lines
- ~ Impaired Waterbodies
- ~ Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- ⬠ IDEP Field Investigation Locations
- ⬠ Estimated Outfalls

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library



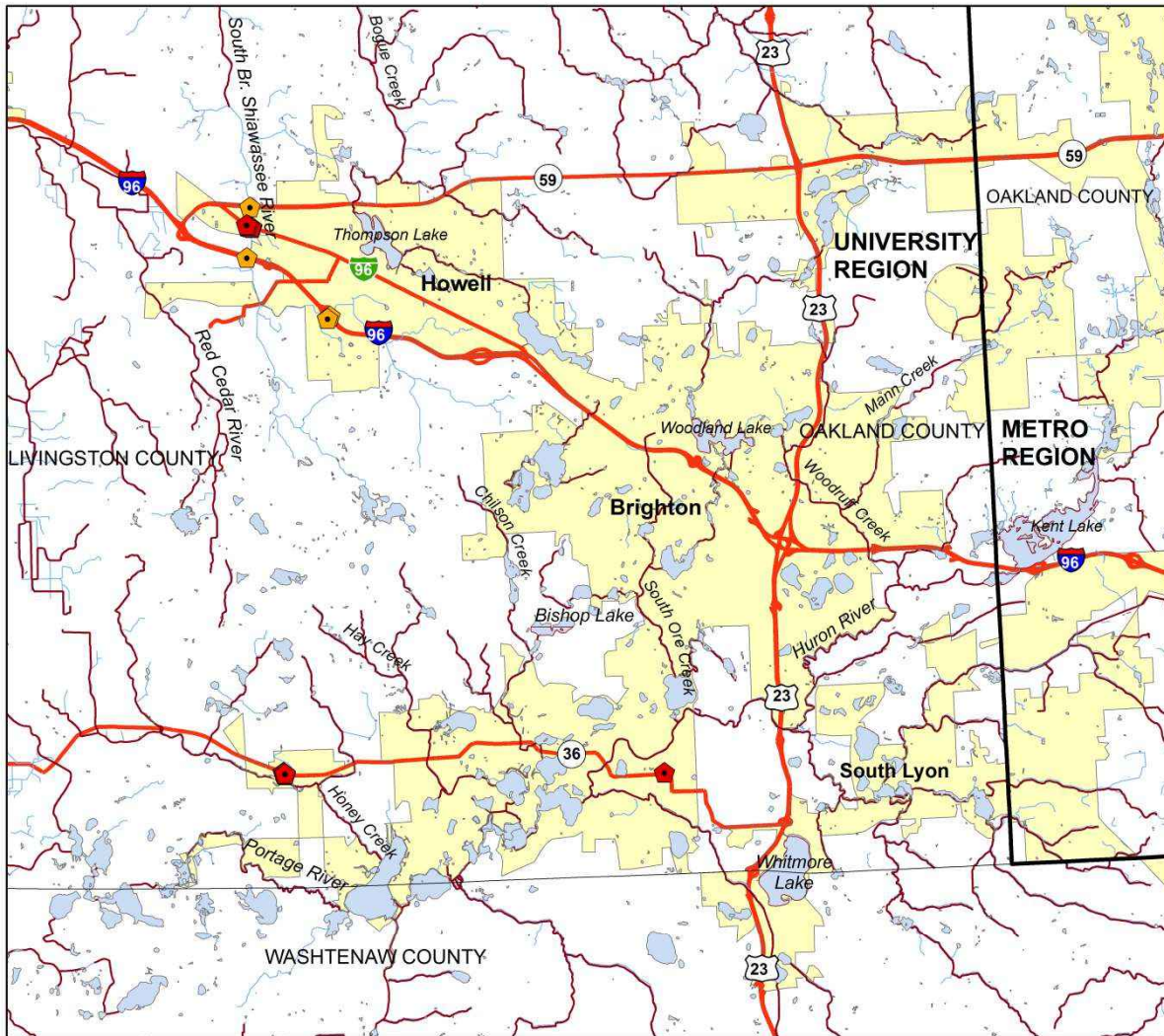
0 0.75 1.5 3 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**



## South Lyon-Howell-Brighton Urbanized Area



### Legend

- County Lines
- Impaired Waterbodies
- Streams and Rivers
- Lakes
- MDOT Roads
- Urbanized Area
- IDEP Field Investigation Locations
- Estimated Outfalls

-Michigan county line data was obtained from the Michigan Center for Geographic Data Library  
 -MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library  
 -Urbanized Area status is based on 2010 census data.  
 -Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset  
 -Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library

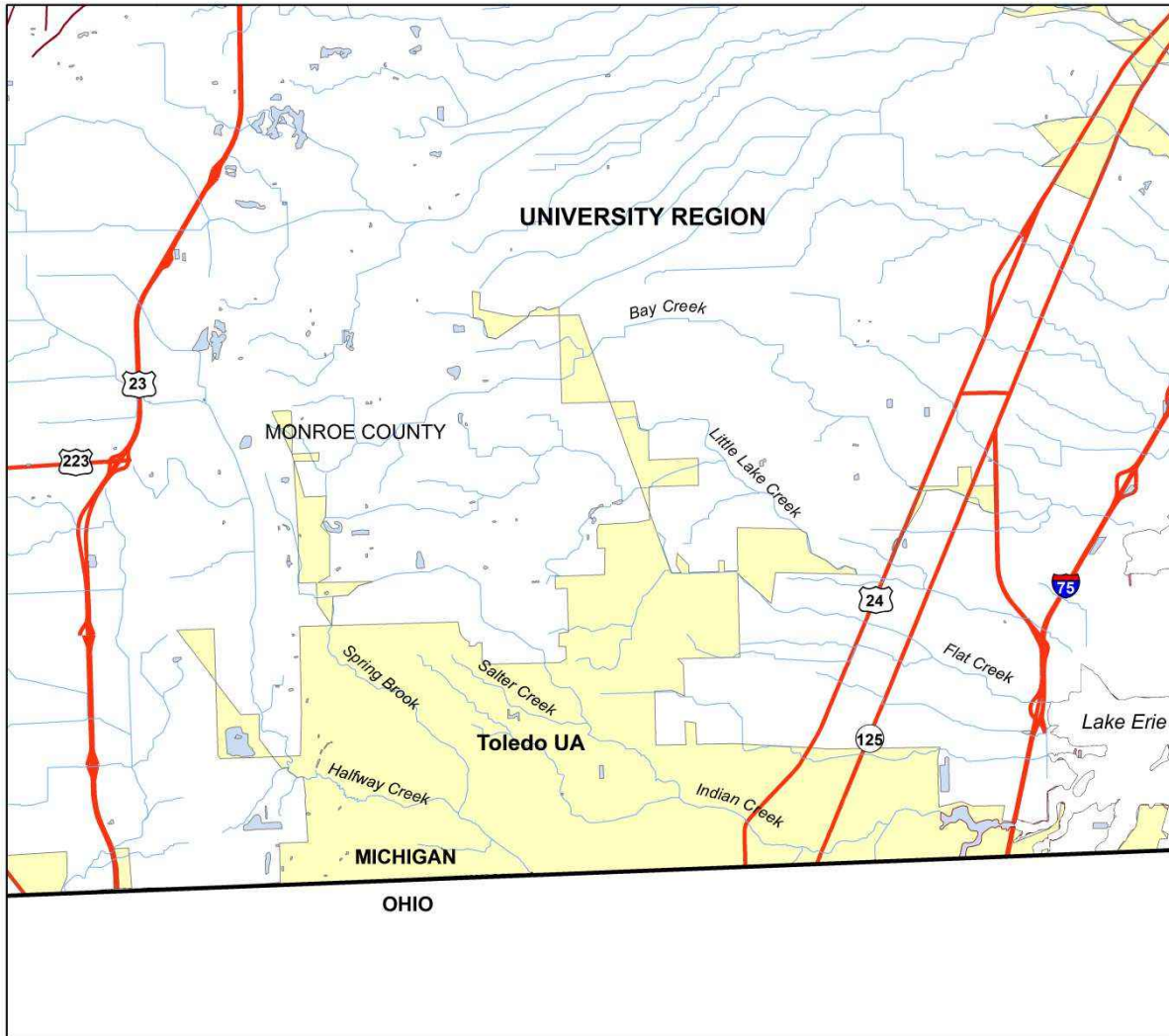


0 1 2 4 Miles

Designer: CSM  
Date: 6/2/2016

**AECOM**

## Toledo Urbanized Area



<p><b>Legend</b></p> <ul style="list-style-type: none"> <li>County Lines</li> <li>Impaired Waterbodies</li> <li>Streams and Rivers</li> <li>Lakes</li> <li>MDOT Roads</li> <li>Urbanized Area</li> <li>IDEP Field Investigation Locations</li> </ul>	<ul style="list-style-type: none"> <li>-Michigan county line data was obtained from the Michigan Center for Geographic Data Library</li> <li>-MDOT road data was obtained from the Michigan Center for Geographic Framework Data Library</li> <li>-Urbanized Area status is based on 2010 census data.</li> <li>-Impaired waterbodies data was obtained from the USEPA National Geospatial Dataset</li> <li>-Michigan waterbody data was obtained through the Michigan Center for Geographic Framework Data Library</li> </ul>	<p>N</p> <p>0 0.5 1 2 Miles</p> <p>Designer: CSM Date: 6/2/2016</p> <p><b>AECOM</b></p>
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<b>ACTIVITY IDEP 3: CONTINUE TO IDENTIFY ILLICIT DISCHARGE CONNECTIONS AND CONDUCT DRY WEATHER SCREENING PILOT PROJECT</b>	
<b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure</b> : Illicit Discharge Elimination Program Activities <b>Statewide or Urbanized Area</b> : Statewide <b>Implemented in Regions</b> : Urbanized Area	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>IDEP 4: Notification of EGLE of Illicit Discharges</li> <li>IDEP 5: Procedure for Determining Effectiveness of the IDEP</li> <li>EDUCATION 4: Develop MS4 Training Module for Designers</li> </ul>
OBJECTIVE	
To identify illicit discharges and connections from the MDOT storm sewer system within 2010 Census urbanized areas as prioritized in the IDEP Plan.	
DESCRIPTION	
MDOT will continue to identify illicit discharges and illicit connections. This can be done through dry weather screenings. The Red Cedar River Dry Weather Screening project will be used as a pilot program used to determine feasibility of using dry weather screenings to identify illicit discharges and connections.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Number and location of confirmed outfalls.</li> <li>Total number of suspected illicit connections/discharges identified.</li> <li>Number and location of manholes tested for each suspected illicit connection/discharge</li> <li>Results of sample analysis.</li> <li>Description and number of illicit connections/discharges verified.</li> <li>Estimated amount and type of pollutant removed.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Follow illicit discharge procedure for 100% of illicit discharges found in order to eliminate illicit connections and discharges.	Follow up with persons who reported illicit discharge to ensure protocol was followed appropriately.
<b>Annual Assessment:</b> The pilot program was completed in 2020. No other actions were taken on this goal in 2021.	
Update EGLE of the areas selected for dry weather screening.	Updated list of dry weather screenings sent to the appropriate person at EGLE by the Stormwater Program Manager.
<b>Annual Assessment:</b> The pilot program was completed in 2020. No other actions were taken on this goal in 2021.	
Desktop analysis for dry weather screening	Preparing storm sewer maps, stormwater system map, developing dry weather screening procedures

<b>Annual Assessment:</b> The desktop analysis was completed in 2016.	
Review outfalls identified in desktop analysis	Field work such as verification of drainage system components and locating stormwater outfalls.
<b>Annual Assessment:</b> MDOT received known outfalls from counties and cities within the dry weather screening project area.	
Results of dry weather screenings will be used to identify and eliminate illicit discharges	The effectiveness of the program will be assessed at the end of the program, in 2021.
<b>Annual Assessment:</b> No issues were found during the dry weather pilot study, so no further action was taken.	
The effectiveness of the dry weather screening will be assessed at the end of the first pilot project.	Report to be given to the Stormwater Program Manager at the conclusion of the dry weather screening pilot project
<b>Annual Assessment:</b> A report was completed and given to the Stormwater Program manager.	
Develop a guide on prioritized areas for non-stormwater discharges based on findings from the first dry weather screening pilot project.	Guide to be completed and distributed to relevant MDOT employees and job-related public.
<b>Annual Assessment:</b> No issues were found during the dry weather pilot study, so no further action was taken.	
Develop a plan and schedule for re-inspecting stormwater point sources for the inspection of stormwater point sources in conjunction with the plan to ensure point sources are inspected every five years.	A plan and schedule will be developed with coordination from a consultant and the Stormwater Program Manager. The final plan to be given to the Stormwater Program Manager for implementation.
<b>Annual Assessment:</b> No issues were found during the dry weather pilot study, so no further action was taken.	



ACTIVITY IDEP 4: REVIEW AND UPDATE PROCEDURE FOR RECEIVING AND NOTIFYING EGLE OF ILLICIT DISCHARGES AND ACTIONS TAKEN	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure:</b> Illicit Discharge Elimination Program Activities <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>IDEP 3: Identify Illicit Connects/ Dry Weather Screening</li> </ul>
OBJECTIVE	
To receive reports and notify EGLE of illicit discharges, statewide, to the MDOT storm sewer system. To take action toward removing these discharges.	
DESCRIPTION	
Procedure for receiving and responding to reports of illicit discharges is established as part of Section 1512.71 of the Construction Permit Manual. Training to effectively implement the procedure will be conducted. Procedure for receiving reports from construction site runoff is already in place as part of the SESC Manual.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Track the number of notices received and the follow-up actions taken.</li> <li>Track the number of illicit connections/discharges identified and removed.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review the procedure for receiving the notice of an illicit discharge. (As stated in Activity IDEP-3, follow the illicit discharge protocol for 100% of the illicit discharges identified).	A notification of procedure method will be posted on the MDOT Stormwater website.
<b>Annual Assessment:</b> The procedure was reviewed in 2019 by the stormwater Program Manager, Stormwater Steering Committee, and Region IDEP coordinators. The process was adjusted to fit current methodologies and updated instructions and flow charts were submitted for inclusion in the Construction Permit Manual.	
Update procedure for notifying EGLE of illicit connections and discharges.	The developed procedure will be sent in a notice to appropriate MDOT staff, identified in the responsible party, by the Stormwater Program Manager.
<b>Annual Assessment:</b> The procedure was reviewed in 2019 by the stormwater Program Manager, Stormwater Steering Committee, and Region IDEP coordinators. The process was adjusted to fit current methodologies and updated instructions and flow charts were submitted for inclusion in the Construction Permit Manual.	

<b>ACTIVITY IDEP 5: DEVELOP PROCEDURE FOR EVALUATING AND DETERMINING THE OVERALL EFFECTIVENESS OF THE IDEP</b>	
<b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure :</b> Illicit Discharge Elimination Program Activities <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>IDEP 3: Identify Illicit Connects/ Dry Weather Screening</li> <li>IDEP 4: Notification of EGLE of Illicit Discharges</li> </ul>
OBJECTIVE	
Develop a procedure that will determine the effectiveness of the IDEP program to effectively eliminate illicit discharges.	
DESCRIPTION	
A procedure for assessing the effectiveness of the IDEP program will be developed. The procedure will be put in place and evaluated annually.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Report number of illicit connection and discharge notices and resolutions</li> <li>Report trends in the number of notices and resolutions</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Report number of notices and resolutions per year.	Notices to be reported in the Annual Report
<b>Annual Assessment:</b> The following Illicit Discharges were reported in 2021:	
<b>-Bay Region:</b> <ul style="list-style-type: none"> <li>Genessee County – 5601 N Dort Hwy (M-54) had an illicit discharge to the MDOT storm that was discovered in the fall of 2021. This was discovered in conjunction with an overflowing catch basin issue that was occurring. MDOT hired AECOM to complete an investigation of the MDOT storm to locate the obstruction in the line and the source of the contamination. The illicit discharge was found to be coming from an adjacent junk yard property, through a City of Flint owned line. MDOT worked with the City to resolve this issue. The pipe was bulkheaded by the City on February 1, 2022.</li> </ul>	
<b>-Grand Region:</b> None.	
<b>-Metro Region:</b> None.	
<b>-North Region:</b> None.	
<b>-Southwest Region:</b> <ul style="list-style-type: none"> <li>I-196/JB Hunt Transportation Services, Hagar Township, Berrien County (carryover from 2020)             <ul style="list-style-type: none"> <li>JB Hunt site drainage discharges onto I-196 ROW</li> <li>No permit on file</li> <li>Discharge has resulted in a large erosion issue located during 2019 MDOT construction</li> <li>Awaiting assessment from TSC Operations Engineer to determine a remedy.</li> </ul> </li> <li>I-94 Between Battle Creek and Marshall MM 101-101.2             <ul style="list-style-type: none"> <li>Stockpiled Soil approximately 25 feet in width at the toe of the slope onto MDOT ROW</li> </ul> </li> </ul>	

<ul style="list-style-type: none"> <li>- Sand Mining Operation</li> <li>- No Permit through Local Agency of File</li> <li>- City of Battle Creek and EGLE have taken lead</li> </ul> <ul style="list-style-type: none"> <li>• M-60 South of Cassopolis <ul style="list-style-type: none"> <li>- Project work directly on shoreline of Stone Lake</li> <li>- Sediment discharge into lake, no SESC measures installed</li> <li>- LAP Project worked on by City of Cassopolis</li> <li>- City and EGLE Resolved Situation</li> </ul> </li> <li>• I-196 South of M-43 Bridge <ul style="list-style-type: none"> <li>- Pipe washing out bank on ROW from nearby farm field</li> <li>- Maintenance plugged pipe and repaired wash out</li> <li>- No permit issued for discharge onto ROW</li> <li>- Property owner contacted about discharge</li> </ul> </li> <li>• M-43 at Cana 43 <ul style="list-style-type: none"> <li>- Drainage encroachment from private detention basin to ROW ditch</li> <li>- Original project did not have an issued permit</li> <li>- Connection has been removed</li> </ul> </li> </ul> <p><b>-Superior Region:</b> None.</p> <p><b>-University Region:</b> None.</p>	
<p>If any feedback on the program is given through stormwater contacts provided on the MDOT website, they will be forwarded to the Stormwater Program manager to compile in an archive. This archive can be monitored over time to determine the evolving comments and effectiveness of the program.</p>	<p>Stormwater contacts to forward any feedback on the stormwater program to the Stormwater Program Manager</p>
<p><b>Annual Assessment:</b> No feedback was received in 2021.</p>	

## **Appendix D – Post Construction Stormwater Management Activities**

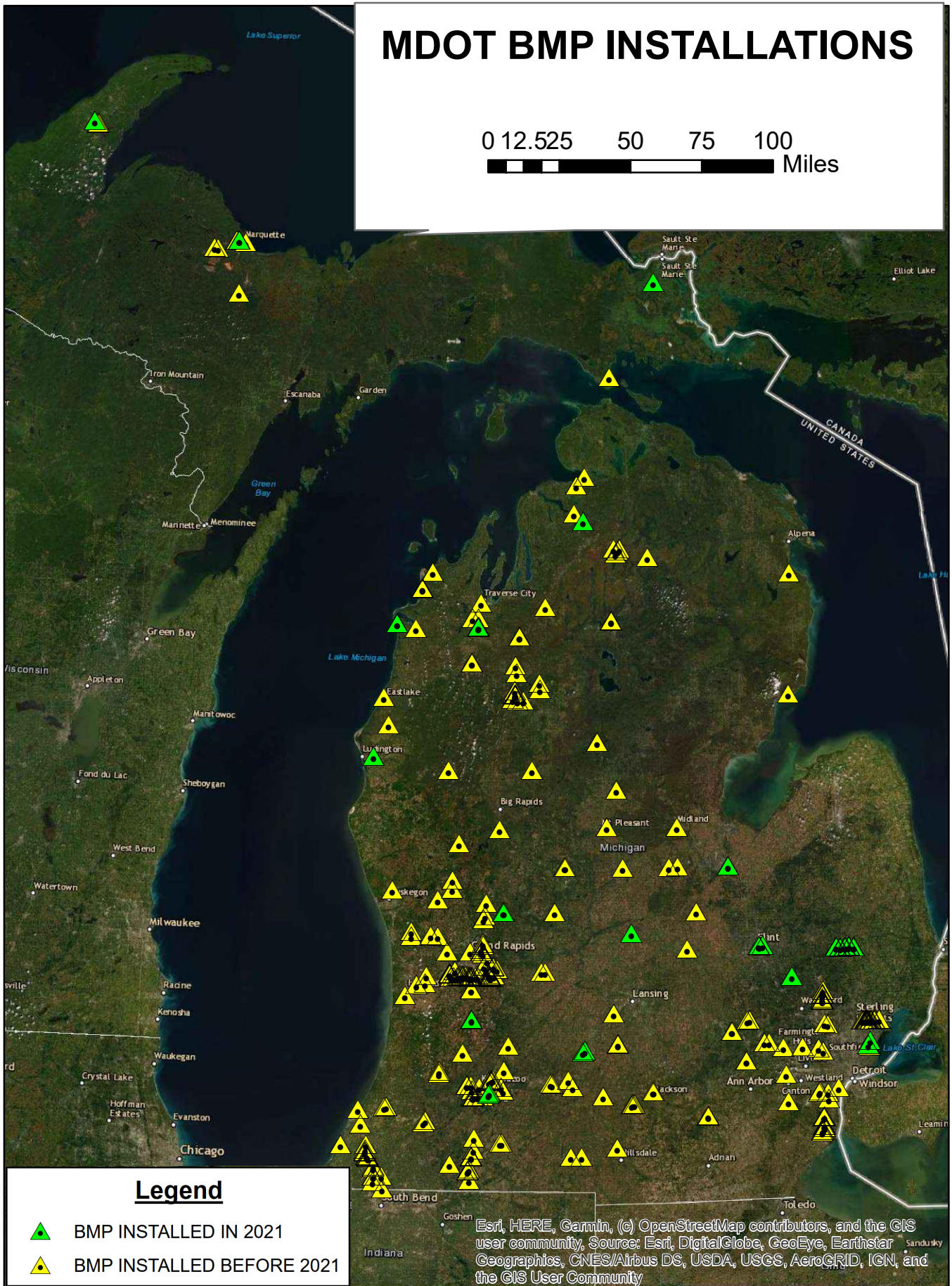
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ACTIVITY POST CONSTRUCTION 1: UPDATE MAP OF KNOWN STRUCTURAL BMPS AND DEVELOP PROCESS FOR TRACKING NEW STRUCTURAL BMPS	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure:</b> Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>POST CONSTRUCTION 2: Review and Update BMP Maintenance Requirements</li> </ul>
<b>OBJECTIVE</b>	
To develop a more complete map of the existing BMPs in Michigan and a system for reporting newly constructed BMPs.	
<b>DESCRIPTION</b>	
A map containing the most up to date BMPs installed in Michigan & system for tracking newly installed BMPs.	
<b>ANNUAL REPORTING</b>	
<ul style="list-style-type: none"> <li>Newly constructed BMPs to be included in the annual report.</li> <li>Updated map of known BMPs</li> </ul>	
<b>MEASURABLE GOALS</b>	
<b>MEASURABLE GOAL</b>	<b>MEASURE OF ASSESSMENT</b>
Develop map of all known BMPs in the state	Map will appear in the Annual Report
<b>Annual Assessment:</b> A map of all BMPs in the state was compiled in 2018. This map has been updated to reflect BMPs that were constructed in 2021 and reported to the storm water program manager to compile the annual report. The map is available on the following page.	
Develop form of means for communicating newly constructed BMPs to the Stormwater Program Manager	Form to be distributed to all TSC Region offices by the Stormwater Program Manager.
<b>Annual Assessment:</b> PC-BMPs constructed in the previous year are reported to the Stormwater Program Manager during the annual report information gathering period.	
Newly constructed BMPs will be submitted using the developed form to the Stormwater Program Manager.	Form given to the Stormwater Program Manager by the TSC Region Managers on an annual basis. New BMPs to be listed in the Annual Report.
<b>Annual Assessment:</b> New BMPs that were constructed in 2021 have been identified in the attached table.	
Update map of known BMPs in the state	Map will appear in the Annual Report
<b>Annual Assessment:</b> The most recent version of the BMP map is available on the following page.	

# MDOT BMP INSTALLATIONS

0 12.5 25 50 75 100  
Miles



<b>Table D1: 2021 PC-BMP Installations</b>		
<b>Region</b>	<b>Location</b>	<b>Type</b>
Bay	I-69 @ I-475	Basin (detention)
Bay	I-69 @ Dort Highway	Basin (detention)
Bay	I-69 @ I-475	Bioretention Ditch
Bay	I-69 WB	Bioretention Ditch
Bay	I-69 EB	Bioretention Ditch
Bay	I-69 WB	Bioretention Ditch
Bay	I-69 EB	Bioretention Ditch
Bay	I-69 EB	Bioretention Ditch
Bay	I-69 WB	Bioretention Ditch
Bay	I-69 WB	Bioretention Ditch
Bay	I-69 EB	Bioretention Ditch
Bay	I-69 WB	Bioretention Ditch
Bay	I-96 EB	Bioretention Ditch
Bay	I-75 @ M-46	Basin (detention)
Bay	I-75 @ M-46	Basin (detention)
Grand	US-10 @ M-179	Basin (detention)
Grand	US-10 @ M-179	Basin (detention)
Grand	M-57 west of Redmond Ave	Infiltration Trench
Grand	M-57 east of Redmond Ave	Infiltration Trench
Grand	US-10 east of US-31	Sumps (extra deep)
Metro	M-3	Hydrodynamic Separator
Metro	M-3	Hydrodynamic Separator
Metro	M-15	Deep Sump
North	M-22 in Frankfort	Basin (Infiltration)
North	M-22 in Frankfort	Sumps (deep)
North	US-131 at Boyne Falls	Sumps (extra deep)
North	M-37 at Mill Rd.	First Flush Basin
North	M-37 @ Mill Rd.	First Flush Basin
North	M-37 @ Mill Rd.	First Flush Basin
North	M-37 @ Mill Rd.	First Flush Basin
Southwest	EB 1-94, west of Sprinkle Rd.	Basin (detention)
Southwest	I-94 @ Sprinkle Rd.	Basin (detention)
Superior	I-75 SB	Basin (detention)
Superior	US-41	Sump (extra deep)
Superior	US-41	Vegetated Ditch
Superior	US-41 non motorized path	Vegetated Ditch

Table D1: 2021 PC-BMP Installations		
Region	Location	Type
University	US-127 @ W. Mead Rd.	Basin (infiltration)
University	I-69, South of Stine Rd.	Basin (detention)
University	I-69 N. of Page Creek	Basin (detention)

ACTIVITY POST CONSTRUCTION 2: REVIEW AND UPDATE MAINTENANCE REQUIREMENTS FOR MDOT BMPs	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure:</b> Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>POST CONSTRUCTION 1: Update Map of Structural BMPs</li> <li>POLLUTION PREVENTION 4: Track Road Maintenance Activity</li> </ul>
OBJECTIVE	
To protect receiving water quality statewide by reviewing and updating maintenance requirements for permanent MDOT-approved BMPs.	
DESCRIPTION	
Updated procedures for the continued maintenance of BMPs.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Discuss updates to the maintenance requirements</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review Maintenance Activity Guides and update accordingly.	Develop recommendations based on the review. To be given to the Stormwater Program Manager and documented in the Annual Report.
<b>Annual Assessment:</b> The SSC recommended changes to 3 Maintenance Activity Guides in 2021. MDOT revised 3 maintenance activity guides in 2021. <ul style="list-style-type: none"> <li>MAG 1220 – Drainage Structure Cleanout – Revised the procedure to account for maintenance of hydrodynamic separators.</li> <li>MAG 1280 – Culvert Underdrain &amp; Edge Drain Cleaning – Revised the procedure to account for maintenance of hydrodynamic separators.</li> <li>MAG 1281 – Culvert Drainage Structure Underdrain &amp; Edge Drain – Revised the procedure to account for maintenance of hydrodynamic separators.</li> </ul>	
Develop and implement procedures for maintaining permanent BMPs not already having a maintenance procedure.	Newly developed procedures will be documented by the Stormwater Program Manager
<b>Annual Assessment:</b> Design guides are being developed for various post construction stormwater BMPs. Each guide will have a section specific to the maintenance for the BMP. This process is occurring concurrently with the Maintenance Activity Guide updates.	
Develop and implement a procedure for maintaining permanent BMPs after acceptance of BMP for use on MDOT projects	Newly developed procedures will be documented by the Stormwater Program Manager
<b>Annual Assessment:</b> For each new BMP constructed in 2021, current maintenance practices were followed.	
Notify appropriate staff of changes to guides.	Notification to be sent out to the appropriate staff via email as needed.
<b>Annual Assessment:</b> As guides are created/updated, appropriate staff will be notified.	
Maintain existing permanent BMPs according to existing MDOT procedures.	BMPs will be inspected every other year by a consultant to ensure proper maintenance.

**Annual Assessment:** BMPs are maintained according to the maintenance plans and are inspected on a rotating two-year basis. In 2021, 123 BMPs were inspected to ensure proper maintenance. See Activity Pollution Prevention 1 for map with locations of the BMPs inspected in 2021.



<b>ACTIVITY POST CONSTRUCTION 3: DEVELOP PROCEDURE TO SELECT AND APPLY BEST MANAGEMENT PRACTICES (BMPs) FOR STORM WATER MANAGEMENT ACTIVITIES (POST-CONSTRUCTION) AND IMPLEMENT PROCEDURES</b> <b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure:</b> Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>POST CONSTRUCTION 1: Update Map of Known Structural BMPs and Develop Process for Tracking new Structural BMPs</li> <li>POST CONSTRUCTION 2: Review and Update Maintenance Requirement for MDOT BMPs</li> <li>POST CONSTRUCTION 4: Achieve Water Quality and Channel Protection Compliance</li> <li>POST CONSTRUCTION 6: Update Drainage Manual</li> <li>POLLUTION PREVENTION 1: BMP Inspections</li> </ul>
OBJECTIVE	
To develop a procedure for selecting, applying and maintaining permanent BMPs for selected MDOT projects statewide. Implementing these procedures will protect receiving water quality.	
DESCRIPTION	
Development of selection procedure for applying BMPs for storm water management activities.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Report completion of BMP selection and pollutant discharge reduction estimate tools.</li> <li>Track the permanent BMPs selected for earth-disturbing projects using existing databases.</li> <li>Track permanent BMP installations, maintenance, and modifications.</li> <li>Track employee training on BMP selection and maintenance.</li> <li>Report pollutant discharge education based on theoretical BMP performance.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Update procedures for selecting permanent BMPs.	A selection tool for selecting BMPs will be posted on the MDOT Storm Water website.
<b>Annual Assessment:</b> A draft version of the BMP selection tool has been completed and is being tested for accuracy with MDOT projects.	
Develop a procedure to estimate pollutant discharge reduction based on theoretical BMP performance.	The BMP selection tool will incorporate a procedure for estimating pollutant discharge reductions.
<b>Annual Assessment:</b> The version of the BMP selection tool distributed to MDOT designers suggests structural BMPs based on the pollutant reduction requirements onsite.	
Issue staff guidance for the selection tool.	A document outlining the instructions for the tool will be distributed to the appropriate storm water related staff.
<b>Annual Assessment:</b> This was completed during 2017 and is being monitored for effectiveness & accuracy.	

Implement procedures to select permanent BMPs.	Procedures will go into effect on the first of the year.
<b>Annual Assessment:</b> This was completed in 2017.	
Evaluate existing procedures for applying and maintaining permanent BMPs.	Recommendations based on the evaluations will be given by the responsible party to the Stormwater Program Manager.
<b>Annual Assessment:</b> This was completed in 2017.	
Update and/or develop procedures for applying and maintaining permanent BMPs.	Approved recommendations will be implemented into procedures.
<b>Annual Assessment:</b> There were no changes to procedures as to when PC-BMPs are required on projects. This measurable goal is ongoing.	
Document procedures and issue staff guidance.	Updated procedures and guidance will be emailed to stormwater related staff.
<b>Annual Assessment:</b> There were no new procedures developed for the stormwater program in 2021. This measurable goal is ongoing.	
Implement procedures to select, apply, and maintain permanent BMPs.	Updated or new procedures will be implemented for the selection, application, and maintenance of BMPs.
<b>Annual Assessment:</b> The BMP screening tool was issued to relevant MDOT staff in 2017 and involves the procedure of how to select and apply structural BMPs. The maintenance of BMPs will be an ongoing goal.	
All projects will be evaluated for permanent stormwater BMP inclusion during scoping and early design.	BMPs identified for inclusion in new projects will be outlined in the Stormwater Annual Report.
<b>Annual Assessment:</b> There were several projects which incorporated permanent, structural BMPs in 2021: <ul style="list-style-type: none"> <li>I-75/M-46 Design-Build, JN 127021, Teo retention basins were added to both northern loop ramp areas at M-46. These were designed to mitigate for the impacts of adding a lane to I-75 on both bounds. The work on this project also filled a large dip in the I-75 roadway and allowed us to remove a pump station.</li> <li>JN 126117 M-57 from Farland Ave. to Ramsdell Dr. – Incorporated 1000' of open graded trench as a stormwater management feature. This trench was a requirement by EGLE due to this project increasing the surface area of impervious roadway. It is located 500' on each side of Redmond Avenue.</li> <li>US-10 at Brye Rd. JN 207795 amber Township, Mason County – New stormwater structures (9) were added to existing stormwater network on US-10, to expand drainage network to included new proposed curb line. The structures that were added included addition depth sumps (4') for additional capacity due to increase in impervious surface.</li> <li>JN 206976 – Cobble ditch on WB I-196 station 923-925 LT (north side), between Fuller and Maryland.</li> <li>JN 206619 – The US-131 at M-179 (129<sup>th</sup> Ave) is being reconstructed in Wayland and Hopkins Township, Allegan County. The new interchange includes two detention/retention ponds on the west side (NW and SW) of US-131 and 12<sup>th</sup> St.</li> <li>I-69, Fenton Rd to Dort Hwy, JN 132026 – Three retention basins were added to this project as stormwater mitigation measures. Two in the I-475 &amp; I-69 interchange and the other in the I-69 &amp; Dort Hwy interchange.</li> <li>I-69, Newark Rd to East Lapeer County Line, JN 210066 – Bioretention ditches were added to various locations throughout the project limits as a stormwater mitigation measure.</li> <li>JN 85541 M-3 HMA Reconstruction from 11mile Road to Common Road: <ul style="list-style-type: none"> <li>- 16 structures with 4-foot sumps</li> <li>- 1 storm water treatment system (Contech Vortech) located in the median of M-3 south of Martin Rd.</li> </ul> </li> <li>M-15 M-Job 212434 – Two (2) 4 -foot sump</li> <li>Grand Traverse County JN 129932 – Built new first flush basins at each quadrant of Mill Road and M-37.</li> <li>Benzie County JN205226 – Constructed new storm sewer system with 4 ft sumps and native dune grass gardens on M-22 in downtown Frankfort.</li> <li>Charlevoix County JN 130013 – Installed extra deep sumps for every manhole on the Boyne Falls reconstruction project from this past summer (2021). This was done to incorporate stormwater BMPs and features to catch sediment in the extra deep sumps before going to any waters of the state. The location is along US-131 between Cherry Hill Rd and Thumb Lake Rd, Village of Boyne Falls Township.</li> <li>JN 105885/105886 in Kalamazoo/Portage – 2.68 mi of roadway reconstruction and widening. Two detention ponds were installed.</li> </ul>	



- JN 115095 – I-69 Design Build full freeway reconstruction from I-94 to Island Hwy. Two detention basin were installed with steel sheet piling weirs. One is located at the I-69 median just south of Stine Rd and the other one is at the I-69 median just north of Page Creek.
- JN 207754 – US-127 Directional Crossovers in Clinton County. New detention basin located in the NW Quadrant at US-127 and Mead Rd
- I-94 reconstruction in Jackson, added bioswales, sediment basin and energy dissipation device.
- JN 128708, US-41 reconstruction in the City of Houghton, approximately 34 catch basins were constructed with 4 foot-deep sumps.
- JN 128702, US-41 rehabilitation in Marquette Township and the City of Marquette, some grassy ditches (bioswales) were constructed.
- JN 211929, US-41 non-motorized path construction in Marquette Township, some grassy ditched (bioswale) were constructed.
- JN 210022, I-75 mainline and interchange ramps from M-80 to north of M-28: A detention basin was constructed near Exit 386 southbound off ramp terminal and westbound M-28, SW ¼ of SE ¼ of Section 15 T47N., R1W. 76'x56' bottom area with 1:3 slopes. Construction included bioretention seeding, inlet and outlet earthwork, and a permanent sheet piling weir.

There were several other projects which incorporated temporary measures or general stormwater improvements in 2021 including:

- Bay Region – 4,915 catch basins cleaned out, 36,420 feet of ditch cleanout, 33 catch basins repaired, and 29 washout repairs.
- M-52, north of Johnson Rd – Replacement of 12' of failed drain tile on the eastside of the road.
- M-52, 7170 S. Graham Rd – Made a repair to a failing culvert tile.
- M-46, west of Thomas Rd – Installed 350' pf 15" CMP to mitigate for the standing water. Added riprap to the inlet and outlet at this location.
- M-47, from Meyer St. to Church St. – 100' of curb and gutter removed and replaced.
- M-47, 7305 Midland Rd – Repaired gutter pan for 15'.
- M-142, just east of McMillan Rd – Removed and replaced a 24" culvert.
- M-19, between Wadsworth Rd & Atwater Rd – Removed and replaced an 18" and a 24" culvert.
- M-25, between Atwater Rd & Huron Sanilac County Line – Removed and replaced a 24" and a 30" culvert.
- M-25, 200' east of Water Rd – Removed and replaced a 24" culvert.
- Grand Region – 3,246 catch basins cleaned out, 5 miles of ditch cleanout, 6 catch basin repairs, 61 washout repairs, 6,300 feet of sand and sediment removal from edge of shoulder, 3 installations of aerator fountains for detention basins, 4 culvert replacements, 26 hazardous spills cleaned up by environmental cleanup companies (from accidents), and 58,000 feet of berm cut (4,500 tons of sediment removal).
- M-20 (8 Mile Rd) under US-131, Mecosta Co. Reduced impervious pavement (trimmed over width paved shoulders 2000 sft.
- M-11, 13 catch basins reconstructed.
- JN 208279 M-82 Reconstruction in Fremont – Used inlet protection fabric drops.
- JN 115084, M-37 Reconstruction in Newaygo – Project is being held open until 2022 for completion of a few pay items. Used shallow turbidity curtain, fabric drops, inlet protection, and silt fence.
- JN 132042 – M-115 bridge over the Manistee River in Mesick. Project is being held open until 2022. Used deep and shallow turbidity curtains, silt fence and sediment removal.
- US-131 – Southbound over the Little Muskegon River, Mecosta Co (maintenance project, no job number) Used turbidity curtain and gravel access approach.
- Metro Region – 11,991 catch basins cleaned out, 177 catch basin repairs, 56 washout repairs, 1,500 ft of lead cleaning, 170 ft of pipe liner, 176 ft of underdrain repair, 2,830 ft of bank drain replacement, 5,660 ft of bank drain placement, 11 bank French drains installed, and 4 ditching improvement projects.
- JN 212434 – New storm sewer outfall to tributary of Kearsley Creek (42.850728, -83.450791).
- JN 204003 – 33,150 sq ft of pavement reduction however, the pavement was replaced with concrete islands.
- North Region – 3,601 basins cleaned out, 212 catch basins rehabbed, 6 culverts replaced, 187 culverts jetted, 4,000 sq ft of slope restoration completed along M-22 in Leelanau County, and 50' of shoreline protection completed on M-37 in Grand Traverse County.
- Southwest Region – 2,324 catch basins cleaned out, 10 catch basins repaired, and 33 washout repairs.
- Superior Region - 1,777 catch basins cleaned out, and 19 catch basins repaired.
- JN 128708 – US-41 reconstruction in the City of Houghton, had a decrease of paved surface area of 6,210 syds or 1.28 acres. A portion of the project was reduced from 4 lanes to 2 lanes.
- US-41 east of Menge Creek Road in Baraga County, placed 740 tons of riprap for shoreline protection.
- US-41 north of Baraga in Baraga County, placed 1850 tons of riprap for shoreline protection.
- M-28 350 feet west of Jumbo River in Houghton County, filled in slope washout and placed manhole drop structure.
- M-26 east of the Lift Bridge in Houghton County, removed 77 cyds of sediment at culvert outlets to Portage Lake and in ditch upstream of culverts.
- University Region – 7,181 catch basin cleanouts, and one large structure/ slope repair.

For more information, see Activity Post Construction 1.

<b>ACTIVITY POST CONSTRUCTION 4: COMPLY WITH PERFORMANCE STANDARDS FOR NEW DEVELOPMENT AND RE-DEVELOPMENT PROJECTS TO THE MAXIMUM EXTENT PRACTICABLE</b> <b>MONITORING YEAR: 2021</b>	
<b>Minimum Control Measure</b> : Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area</b> : Statewide <b>Implemented in Regions</b> : All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION1: Program Assessment and Reporting</li> <li>POST CONSTRUCTION 3: Develop Selection Procedure for BMPs</li> <li>POST CONSTRUCTION 5: Review Projects Discharging to Impaired Waters</li> <li>POST CONSTRUCTION 7: Site Plan Review for Post Construction Projects</li> </ul>
OBJECTIVE	
Achieve compliance standards for water quality and channel protection issued by the United States Environmental Protection Agency (EPA) for all new development and redevelopment projects.	
DESCRIPTION	
As designated by the EPA, all new development and redevelopment projects must comply with water quality and channel protection standards. Compliance with channel protection and water quality standards will be estimated, per project, using the BMP selection tool as a preliminary analysis tool, as described in Activity Post Construction 3.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Post construction projects achieving standards will be documented in the Annual Report</li> <li>All newly constructed BMPs (as well as modifications, replacements, or enhancements of BMPs) will be documented in the Stormwater Annual Report</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Desktop assessment of new development and redevelopment projects using the BMP screening tool in preliminary analysis.	Results from the analysis will be submitted for each project to the Stormwater Program Manager.
<b>Annual Assessment:</b> The BMP screening tool has been completed and distributed to MDOT designers. Throughout 2019, the tool was be tested for future projects, with the goal of this tool being used in the preliminary analyses of all projects. The tool is incorporated into the MDOT Scoping Manual and directed to be used on all projects. All projects that use the MEP process must show the results of the tool.	
Meet compliance standards goals to the maximum extent practicable. Compliance standard goals include: <ul style="list-style-type: none"> <li>BMPs are designed based on site constraints to reduce post development suspended solids loadings</li> <li>Treat runoff from the 90% non-exceedance storm</li> <li>When impervious area is increased, post-construction runoff rate and volume match pre-development conditions as closely as possible for storms up to the two-year, 24-hour event</li> <li>Addressing specific pollutants on a site specific basis</li> </ul>	Results from the analysis will be submitted for each project to the Stormwater Program Manager.
<b>Annual Assessment:</b> All newly constructed projects meet the water quality and/or channel protection standards or were approved as providing the MEP stormwater treatment.	
Document the modification, replacement, or enhancement of BMPs.	A description of the work done will be given to the Stormwater Program Manager for inclusion in the Annual Report
<b>Annual Assessment:</b> Three existing BMPs were modified, replaced or enhanced in 2021. Three aerator fountain systems were installed in detention basins in the Grand Region.	

<b>ACTIVITY POST CONSTRUCTION 5: REVIEW PROJECTS WITH STORMWATER DISCHARGES TO WATER BODIES WITH PROMULGATED TOTAL MAXIMUM DAILY LOADS (TMDLs)</b>	
<b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure:</b> Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>POST CONSTRUCTION 3: Procedure to Select BMPs</li> <li>POST CONSTRUCTION 4: Water Quality and Channel Protection</li> <li>POST CONSTRUCTION 6: Update Drainage Manual</li> </ul>
OBJECTIVE	
To develop a procedure for the review of projects with stormwater discharges to water bodies with a promulgated TMDL and to implement stormwater controls statewide to meet responsibilities established by TMDLs to the MEP.	
DESCRIPTION	
An interactive map showing trunklines crossing 303(d) listed water bodies will be beneficial in the planning of MDOT projects to ensure compliance with water quality standards of discharges. All new development and redevelopment projects will use this map as a tool to assess if stormwater discharges to TMDL water bodies.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Report completion of interactive mapping system on MDOT Stormwater Website</li> <li>Track location of projects discharging to waters with TMDL</li> <li>Track compliance with TMDL requirements.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Develop interactive mapping system on the MDOT Stormwater Web Site showing MDOT trunklines crossing 303(d)-listed water bodies.	Completed tool available to MDOT staff.
<b>Annual Assessment:</b> This measurable goal was completed in 2016 and is available to MDOT design staff. This newly created GIS tool allows users to enter their project limits and see if they intersect with 303(d) listed waters.	
Review all new projects that discharge to waters of the state with a promulgated TMDL.	Projects to be reviewed by environmental staff as necessary.
<b>Annual Assessment:</b> 180 projects were reviewed in 2021 that could discharge to a waters of the state. Each was reviewed for applicable TMDL requirements.	
Evaluate various options to mitigate projects discharging to TMDL water bodies. BMPs are to be implemented to comply with stormwater related requirements to meet TMDLs.	Projects to be evaluated by environmental staff and an internal stormwater committee as needed.
<b>Annual Assessment:</b> In 2021, there were 52 projects within TMDL areas for Sediment, Dissolved Oxygen, and Nitrates. All projects were reviewed for compliance with TMDL requirements.	
Install and maintain BMPs on projects intersecting TMDL waterbodies.	Projects to be evaluated by environmental staff and an internal stormwater committee as needed.
<b>Annual Assessment:</b> All projects constructed in 2021 that were in TMDL attainment areas included appropriate BMPs to address the given TMDL.	

ACTIVITY POST CONSTRUCTION 6: PERIODICALLY UPDATE DRAINAGE MANUAL	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure:</b> Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>PUBLIC INVOLVEMENT 3: Coordinate with MPOs</li> <li>POST CONSTRUCTION 3: Selection Procedure for BMPs</li> <li>POST CONSTRUCTION 4: Water Quality and Channel Protection</li> <li>POST CONSTRUCTION 5: Review Projects Discharging to Impaired Waters</li> </ul>
OBJECTIVE	
To update MDOT's policies and procedures for the design of BMPs. Other fields to be reviewed include the construction, maintenance, and demolition of BMPs as outlined in the manual.	
DESCRIPTION	
The existing Drainage Manual will be reviewed and revised as needed to include the latest details of the stormwater management program. Notification and guidance will be given to appropriate MDOT employees and job-related public.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Track changes made to the Drainage Manual.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Assess the need to update the Drainage Manual. The first update of the Drainage Manual will include the new source of rainfall data of EGLE's 2006 memo providing the 90 percent annual non-exceedance storm statistics.	Proposed changes to be drafted by the environmental staff.
<b>Annual Assessment:</b> The Drainage Manual was assessed in 2016. The result of the assessment is that the manual needs to be updated to reflect the current status of the MDOT stormwater program.	
Update the Drainage Manual. Changes to manual must be approved by the Engineering Operations Committee (EOC).	Proposed changes to be delivered to the EOC for approval.
<b>Annual Assessment:</b> A document named the Post-Construction Stormwater BMP Design Guidance has been created to supplement the Drainage Manual and aid MDOT designers in the design of structural stormwater BMPs. A draft of the document was created in 2017 and progress was made on the draft throughout 2021. Updates to the Drainage Manual are being examined as part of a program review with FHWA.	
Notify appropriate staff of changes to the manual.	Updated drainage manual will be distributed to the appropriate staff.
<b>Annual Assessment:</b> MDOT staff are notified as new drafts are published.	

ACTIVITY POST CONSTRUCTION 7: SITE PLAN REVIEW FOR PROJECTS	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure:</b> Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>POST CONSTRUCTION 4: Compliance with Water Quality and Channel Protection Standards</li> </ul>
OBJECTIVE	
Ensure compliance with post-construction stormwater requirements through a review process of site plans for installation, operation, and maintenance.	
DESCRIPTION	
As designated by the EGLE MS4 Permit, MDOT must submit site plans for approval for each project subject to the post-construction stormwater runoff control requirements. Reviews will allow MDOT to ensure that the finished project will sufficiently meet post-construction stormwater runoff program requirements and long-term operation and maintenance of BMPs.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Document number of projects submitted for review</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Initial site plans of post-construction stormwater BMPs shall be submitted for review to MDOT stormwater staff.	Site plan reviews by stormwater staff.
<b>Annual Assessment:</b> In 2021, 166 projects were reviewed by the MDOT Aquatic Resource Analyst for the inclusion of stormwater pc-bmps.	
Develop procedure for the site plan review and approval process. Procedure shall include a checklist of specific criteria to be used by plan reviewers.	Procedure shall be distributed to appropriate staff by the MDOT Stormwater Program Manager.
<b>Annual Assessment:</b> During the environmental clearance process, all projects are reviewed for appropriate PC-BMPs. The Stormwater Steering Committee has developed a process for staff to follow when a project doesn't fully meet the post construction treatment goals but has met them to the maximum extent possible.	

## **Appendix E – Construction Stormwater Runoff Control Activities**

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<b>ACTIVITY CONSTRUCTION 1: REVIEW INTERNAL QUALITY ASSURANCE/QUALITY CONTROL (QAQC) PROTOCOL FOR CONSTRUCTION STORMWATER RUNOFF CONTROL</b>	
<b>MONITORING YEAR: <u>2021</u></b>	
<b>Minimum Control Measure :</b> Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area:</b> Statewide <b>Implemented in Regions:</b> All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>• ADMINISTRATION 1: Program Assessment and Reporting</li> <li>• POST CONSTRUCTION 4: Water Quality and Channel Protection</li> <li>• POST CONSTRUCTION 5: Review Projects Discharging to Impaired Waters</li> <li>• IDEP 1: List of Construction Projects and Maintenance Activities</li> </ul>
OBJECTIVE	
To improve the effectiveness of temporary BMPs statewide through internal QAQC for construction stormwater control.	
DESCRIPTION	
Development of the QAQC protocol is underway and will be submitted to the Environmental Committee for approval.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>• Track number and result of internal reviews</li> <li>• Track actions taken per MDOT/SESC Manual.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Review the QAQC protocol for construction stormwater control.	Revisions given to the Stormwater Program Manager by the responsible party.
<b>Annual Assessment:</b> 65 QAQC reviews were completed on plans and 35 reviews were done for construction.	
Update the QAQC protocol for construction stormwater control as necessary.	Final QA/QC protocol given to the Stormwater Program Manager by the responsible party.
<b>Annual Assessment:</b> This effort was done for the reviews completed in 2021.	
Notify the appropriate staff of changes to the protocol.	Notification and guidance documents to be distributed to staff members.
<b>Annual Assessment:</b> This effort was done for the reviews completed in 2021.	

## **Appendix F – Pollution Prevention/Good Housekeeping Activities**

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ACTIVITY POLLUTION PREVENTION 1: BMP INSPECTIONS	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure</b> : Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area</b> : Statewide <b>Implemented in Regions</b> : All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> </ul>
<b>OBJECTIVE</b>	
Routine inspections of MDOT structural BMPs to ensure compliance with various components of the permit.	
<b>DESCRIPTION</b>	
BMPs will undergo inspection to ensure that facilities comply with developed maintenance procedures.	
<b>ANNUAL REPORTING</b>	
<ul style="list-style-type: none"> <li>Summary of all inspections done and recommendations for each BMP.</li> </ul>	
<b>MEASURABLE GOALS</b>	
<b>MEASURABLE GOAL</b>	<b>MEASURE OF ASSESSMENT</b>
An inspection of BMPs shall be conducted at least once every five years to ensure appropriate maintenance.	Inspection reports to be given to the Stormwater Program Manager.
<b>Annual Assessment:</b> 123 BMPs were inspected during the 2021 monitoring period. See map below for the BMP inspections schedule for all years in the permit cycle.	
Items identified during inspections as needing attention shall be addressed.	Stormwater Program Manager to notify maintenance crews and follow up, as necessary.
<b>Annual Assessment:</b> Recommendations provided in the 2021 summary will be addressed during 2022.	
As needed, identify BMPs to be modified, replaced, or enhanced.	BMPs identified for modification, replacement, or enhancement will be outlined in the annual report.
<b>Annual Assessment:</b> On an as needed basis throughout the permit cycle, BMPs will be modified, replaced or enhanced.	

### **Stormwater Best Management Practices - 2021 Inspections Summary**

Stormwater BMPs are inspected every 2 years on a rotating basis. 123 of these BMPs were inspected in 2021. **Figure 1** shows the locations of BMPs inspected in 2021.

Each components of the BMP such as fencing, inlet and outlet conditions, mowing, trash and debris, etc. is inspected and scored on a scale from 1-9. An average score is then taken and documented for each BMP. This value is used to track the BMP's condition over time. Recommendations are also given based on the condition of the BMP.



ACTIVITY POLLUTION PREVENTION 2: AUDIT THE POLLUTION INCIDENT PREVENTION PLAN (PIPP) REQUIREMENTS	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure</b> : Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area</b> : Statewide <b>Implemented in Regions</b> : All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> </ul>
<b>OBJECTIVE</b>	
Assure that vehicle maintenance activities statewide do not pollute stormwater runoff to the maximum extent practicable.	
<b>DESCRIPTION</b>	
Internal auditing of the PIPP will continue to be conducted and implemented.	
<b>ANNUAL REPORTING</b>	
<ul style="list-style-type: none"> <li>Summary of PIPP audits</li> <li>Document new programs, policies, procedures and information.</li> </ul>	
<b>MEASURABLE GOALS</b>	
<b>MEASURABLE GOAL</b>	<b>MEASURE OF ASSESSMENT</b>
Conduct an audit of the PIPP requirements every three years.	Results of audit reported to Stormwater Program Manager
<b>Annual Assessment:</b> Throughout 2021, the Safety and Security Administration conducted 16 environmental audits at various MDOT garages/facilities around the state. Environmental audits are required to be conducted at MDOT maintenance facilities at least once every three years to ensure environmental compliance and consistency with all State and Federal regulations. Part of the audit process includes looking at stormwater discharges and protection measures for polluting materials in place at each of the facilities. Every garage is required to have a site plan which includes information regarding the location of floor, roof and storm drains as well the direction of flow and discharge location. All wastewater coming from inside and around the facility is monitored by its direction of flow and where it is discharged to ensure that polluting materials do not reach the waters of the US. Major bodies of water, if any, that are in close proximity to the garages are noted on the site plan as well. Polluting materials that could cause harm to persons or the environment that are stored and/or used at garages are all documented in the PIPP which includes the name, location, quantity and pollution prevention measures in place for that specific material. If a large spill were to occur and polluting materials reached waters of the State, employees would follow the Environmental Emergency Spill Response Flowchart and contact the appropriate personnel. Protection of the environment and human health remains a top priority at all MDOT facilities.  Facilities visited included: 1. Saginaw Eastside Garage 2. Mt. Pleasant Garage 3. Kalkaska Field Operations 4. Houghton Garage 5. L'Anse Garage 6. Cadillac Special Crews 7. Detroit Maintenance Garage 8. Marion Garage 9. Reed City Garage 10. Marshall Garage 11. Kalamazoo Garage 12. Charlotte Garage	

13. International Bridge Maintenance Facility 14. Mason Garage 15. Southwest Region Maintenance Facility Special Crews 16. Aeronautics Facility	
Follow-up on any delinquent plan requirements and revise appropriately.	Follow up to be confirmed to Stormwater Program Manager
<b>Annual Assessment:</b> The MDOT Safety and Security Administration provided guidance when corrective measures were requested.	
Formally accept the changes made to the PIPP.	To be made by the Stormwater Program Manager
<b>Annual Assessment:</b> There were no formal changes to the overall PIPP process in 2021	

ACTIVITY POLLUTION PREVENTION 3: CONDUCT INSPECTIONS OF MAINTENANCE FACILITIES	
MONITORING YEAR: <u>2021</u>	
<b>Minimum Control Measure</b> : Construction, Post Construction, Good Housekeeping <b>Statewide or Urbanized Area</b> : Statewide <b>Implemented in Regions</b> : All Regions	<b>Related Activities</b> <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> <li>POLLUTION PREVENTION 2: Audit PIPP Requirements</li> </ul>
OBJECTIVE	
Routine inspections of MDOT maintenance facilities to ensure compliance with various components of the permit.	
DESCRIPTION	
Maintenance facilities will undergo inspection to ensure that facilities comply with: good housekeeping for salt and sand storage, compliance with discharges from cutting, grinding, drilling, or hydro demolition of concrete or asphalt, and fleet maintenance activities.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Summary of all inspections done and recommendations for each facility.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
An inspection of maintenance facilities shall be conducted at least once every five years. Salt and sand storage facilities, cross connections between storm sewer and sanitary sewer, the washing of vehicles, and labelling of outfall structures shall be inspected.	Reporting of each inspection provided to the Stormwater Program Manager
<b>Annual Assessment:</b> 11 maintenance facilities were inspected during the 2021 monitoring year. See attached map for a schedule of all inspections during the permit cycle.	
Recommendations shall be presented if practices are not in compliance with the permit.	Reporting of each inspection provided to the Stormwater Program Manager
<b>Annual Assessment:</b> In 2021, there were several issues found during inspections which were presented to the stormwater program manager. All maintenance facilities with noted issues were notified by the Stormwater Program Manager to schedule corrective actions.	
Maintenance facilities with provided recommendations shall address concerns within one year of the inspection.	The Stormwater Program Manager will work closely with maintenance facility personnel to ensure recommendations are incorporated.
<b>Annual Assessment:</b> Recommendations given for issues found during the 2021 inspections should be addressed in 2022.	

### **Maintenance Facilities – 2021 Inspections Summary**

MDOT's Maintenance Facilities are inspected every 5 years on a rotating basis. Eleven maintenance facilities were inspected in 2021. A map of the garages inspected in 2021 as well as the future inspection schedule is presented in **Figure 1**.

Maintenance Facilities were inspected for cross connections between the storm sewer and sanitary sewer systems as well as functionality and maintenance of each of these systems. Items identified as a risk during inspections were assessed for the probability of failure and the consequence of failure. Based on the scores given for each of these categories, items were determined to be high, moderate, or low risks.



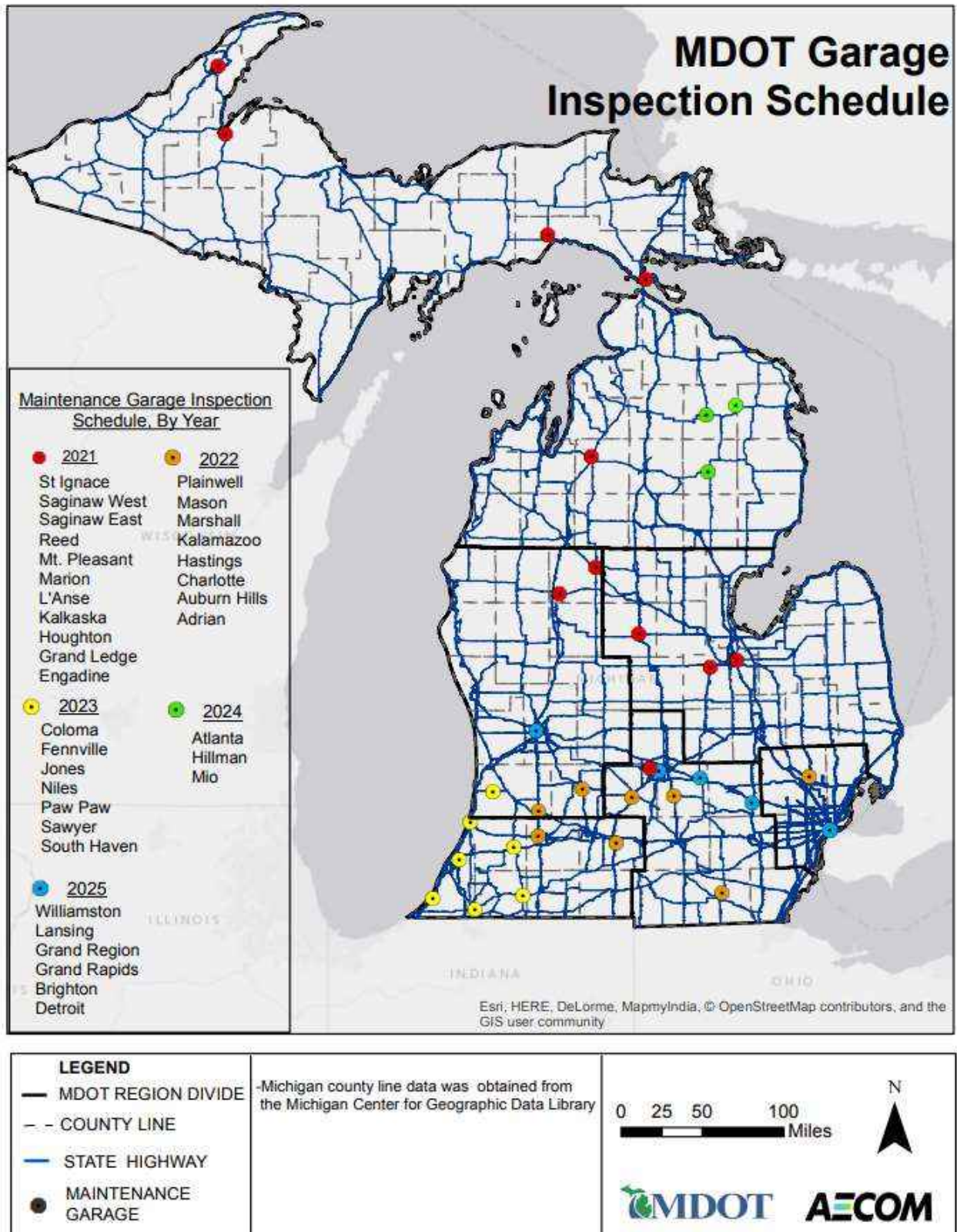


Figure 1 - Maintenance Facility Inspection Schedule



ACTIVITY POLLUTION PREVENTION 4: DOCUMENTATION OF ROAD MAINTENANCE ACTIVITIES	
MONITORING YEAR: <u>2021</u>	
Minimum Control Measure : Construction, Post Construction, Good Housekeeping Statewide or Urbanized Area: Statewide Implemented in Regions: All Regions	Related Activities <ul style="list-style-type: none"> <li>ADMINISTRATION 1: Program Assessment and Reporting</li> </ul>
OBJECTIVE	
Document road maintenance activities related to stormwater and stormwater pollution control.	
DESCRIPTION	
Road maintenance activities include catch basin cleaning and street sweeping will be documented and reported to the Stormwater Program Manager on an annual basis for inclusion in the Stormwater Annual Report. MDOT roadways will be operated and maintained and storage facilities will be constructed to reduce pollutants washing into surface waters statewide.	
ANNUAL REPORTING	
<ul style="list-style-type: none"> <li>Estimate actual quantity of salt used for de-icing versus maximum calculated amount based on Maintenance Performance Guide 14100.</li> <li>Track hours of street sweeping and catch basin cleaning conducted.</li> </ul>	
MEASURABLE GOALS	
MEASURABLE GOAL	MEASURE OF ASSESSMENT
Street sweeping will be completed and time commitments will be determined annually, based on annual budgets.	Reported by TSC Region Manager to the Stormwater Program Manager on an annual basis.
Annual Assessment: Refer to Figure F1 for recorded street sweeping activity, by region.	
Catch-basin cleaning will be completed and time commitments will be determined annually, based on annual budgets.	Reported by TSC Region Manager to the Stormwater Program Manager on an annual basis.
Annual Assessment: Refer to Figure F2 for recorded catch basin cleaning activity, by region.	
Follow MDOT Maintenance Activity Guides for all maintenance activities (road maintenance, street sweeping, catch basin cleanout, bridge, unpaved road maintenance, right of way, culvert, underdrain and edge cleaning, facility and truck washing, deicing, cold weather)	Maintenance Staff Manager to ensure all employees follow procedures.
Annual Assessment: All regions have been in compliance with the maintenance activity guidelines for 2021. A summary of winter maintenance including salt, sand, and liquid treatment statewide, per county, and per MDOT region is presented in the following pages. Refer to Figure F3 for recorded washout repairs per MDOT region, as well.	

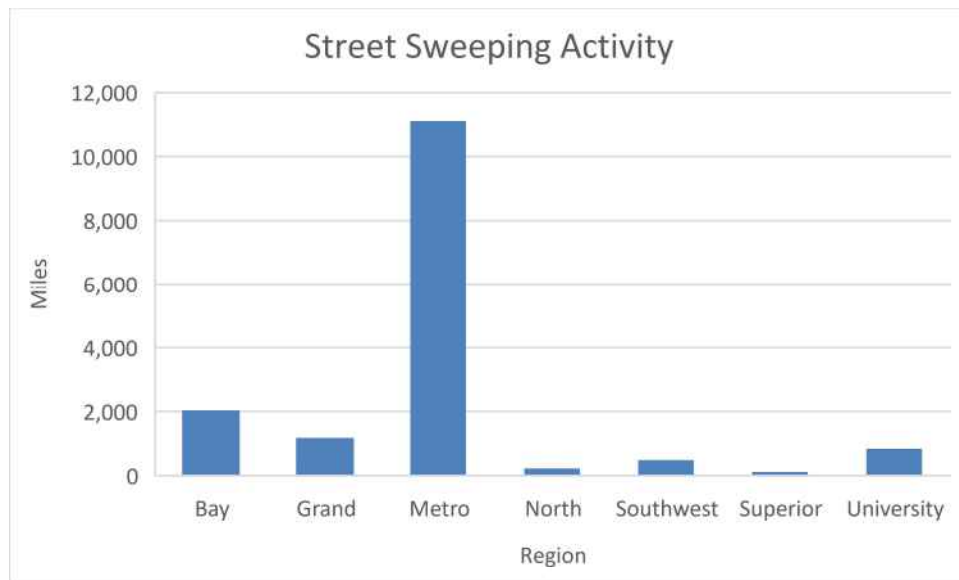


Figure F1 – 2021 Street Sweeping By Region

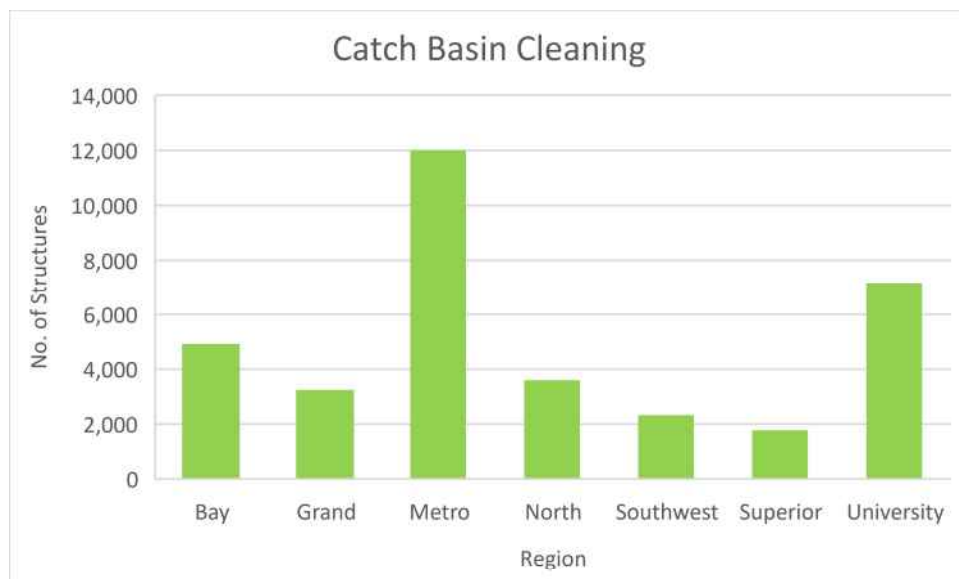


Figure F2 – 2021 Catch Basin Cleaning By Region



Figure F3 – 2021 Washout Repairs By Region