State of Michigan

National Pollutant Discharge Elimination System Permit

Application for Discharge of Stormwater to Surface Waters from a Municipal Separate Storm Sewer System

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CITY OF CENTER LINE

Storm Water Management Program (SWMP)

City of Center Line

Department of Public Works

East Ten Mile Road

Center Line, Michigan 48015

Revised May 24, 2019

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Section I - Introduction and Permit Information

The National Pollutant Discharge Elimination System (NPDES) Program protects the surface waters of the state by assuring that discharges of wastewater comply with state and federal regulations. Anyone discharging or proposing to discharge wastewater to the surface waters of the State of Michigan must make an application for and obtain a valid NPDES permit prior to the wastewater discharge.

NPDES permits are required under Section 402 of the Federal Clean Water Act (the Federal Act), as amended (33 U.S.C. 1251 et seq., P.L. 92-500, 95-217), and under Part 31, Water Resources Protection, of Michigan's Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (the Michigan Act). Part 31 of the Michigan Act also provides authority for the State to issue NPDES permits. The Michigan Department of Environmental Quality (MDEQ now MDEGLE) administers the NPDES permit program for the State of Michigan.

The City of Center Line as a public body that owns or operates a regulated Municipal Separate Storm Sewer System (MS4) is eligible for permit coverage including, but not limited to, the United States, the State of Michigan, a city, village, township, county, public school district, public college or university, a single purpose governmental agency, or any other governing body which is created by federal or state statute or law. The City's system is recorded as Center Line MS4-Macomb.

Section II – Contact Information

The City of Center Line owns and operates the City's regulated MS4 system. The City personnel responsible for the operation, maintenance and MS4 permit compliance are listed with their contact information in the Table on page 1 of the Storm Water Discharge Permit Application provided with this Storm Water Management Plan (SWMP).

Section III – Permit Action

City of Center Line is located entirely within the Red Run Drain (R2W) subwatershed. The Bear Creek is tributary to the Red Run Drain and both are tributaries of the Clinton River.

The initial Red Run Drain Subwatershed Watershed Management Plan WMP was submitted to the MDEQ November 1, 2006. The WMP and associated component plans were written to satisfy Michigan Department of Environmental Quality (MDEQ) Watershed General Permit No. MIG61900 requirements.

The City recognized that by working collectively with the other stakeholders on a regional and watershed basis illicit discharge elimination, public education and other water management activities, could be implemented more effectively and cost- efficiently. This included review and input in drafting various compliance related documents for the collaborating stakeholders.

For instance, through this collaborative process SEMCOG provided the initial draft of several of the Policies which are included with the City's SWMP. Subsequent to the further implementation and expansion of the NPDES Phase II requirements based on the 2010 Urbanized Areas Maps, the City originally applied for a new individual jurisdictional permit as a Small MS4, April 1, 2015.

Section IV – Regulated Area

Center Line covers an area of 1302 acres or 2.03 square miles. There are over 1.5 miles of public roads under the jurisdiction of the Macomb County Department of Roads (MCDR) and 1.1 miles of public highways under the jurisdiction of the Michigan Department of Transportation (MDOT). City of Center Line owned 8.5 miles of City major roads and 18.8 miles of local roads. Based on the 2010 Urbanized Areas Maps, the City is regulated as a Small MS4 and is located in the Detroit, Michigan Urbanized Area (See Detroit, Michigan Urbanized Area Map in Appendix A) and centrally located within and surrounded by the City of Warren (See Center Line – Urbanized Area Map in Appendix A).

While Center Line holds a jurisdictional permit, the City will continue to work collectively with these agencies, and other stakeholders on a regional and watershed basis for illicit discharge elimination, public education and other water management activities that can be implemented more effectively and cost-efficiently.

Section V – Discharge Point Location & Mapping

The City owns or operates a total of 50 known discharge points from its City owned facilities (See Table -1A in Appendix A) and separated storm sewers into the County drain system or other MS4s. These are identified in Appendix A on Maps A-1 through A-10 and ten (10) City of Center Line Sanitary and Storm Sewer Base Maps (Maps 1-10). They are also listed in Appendix A as Table 1 with the corresponding receiving County Drain, and the latitude and longitude of each is identified accordingly.

The City Department of Public Works (DPW) front office maintains electronic digital copies and/or hardcopies of its MS4 infrastructure. The City's maps and the referenced tables in spreadsheet format are a product of the City's Geographic Information System (GIS). Any changes in the system are typically made within 30 days of receiving updated information. The maps and tables are available for reference and updating by City personnel including field applications via their electronic devices.

Newly Constructed or Identified Outfalls

In order to seek authorization for discharge, for any discharge point that is identified, constructed or installed after August 30, 2018, the City will provide an updated outfall map clearly showing the location of the discharge point, its identifying number , the latitude and longitude of the discharge point, and the receiving Macomb County Drain or waters of the state.

MS4 Discharge Point Labeling

The City will provide permanent identification for all of its outfalls/discharge points as required under the permit.

Section VI – Nested Jurisdictions

The City does not currently have any nested jurisdictions as the Center Line Public Schools within the City are nested under the Macomb Intermediate School District MS4 – Macomb.

Section VII – Storm Water Management Program

This Storm Water Management Program (SWMP) document is a compilation of several plans, programs, procedures, and policies, such as the City's Action Plan, Illicit Discharge Elimination Plan (IDEP), and Public Education Plan (PEP). Combined these documents constitute the City's permit obligations and commitments aimed at helping to reduce the discharge of pollutants from the drainage system to the Maximum Extent Possible (MEP). This includes implementing Best Management Practices (BMPs) to comply with the six minimum control measures (40 CFR 123.34(b)) and documenting the effectiveness of the BMPs. Documentation required under the City's individual jurisdictional permit shall be included in the required Biennial Progress Reports to be submitted to the MDEQ every two years of the permit cycle.

Section VII.a.– Enforcement Response Procedure

The City's facilities within its MS4 are generally under the control of City personnel, violations related to the City's MS4 in these cases are avoided via employee training and supervision. For the broader drainage system including the City's Act 51 administered roadways specific ordinances provide the necessary enforcement mechanism.

The City has various codes and ordinances that are applicable to storm water issues in coordination with the Macomb County Public Works Office (MCPWO), the Macomb County Department of Roads (MCDR), and State of Michigan and Federal Regulatory agencies. Enforcement Response Procedures (ERP) may vary slightly dependent on the specific code or ordinance in question. The ERP for the SWMP is adopted as Policy S2 included in Appendix D which incorporates the existing City Code of Ordinance Sections. Generally the procedures for suspected or actual code of ordinance violations are listed within this Policy.

Section VII.b.– Public Participation/Involvement Program

The City of Center Line's Municipal Separate Storm Sewer System Public Participation

D – Policy, Ordinances and Regulations of this SWMP. Section III of the Policy articulates the required procedures to make the SWMP available for inspection and comment and to invite public involvement in the implementation and review of the plan.

Section VII.c.– Public Education Plan

The City's Public Education Plan (PEP) has been developed and implemented jointly in a collaborative effort of the members of two watershed groups; they are the Red Run Drain (R2W) subwatershed Group and the Clinton River Watershed Council (CRWC). The PEP implemented by the City is the Clinton River Watershed and Lake St. Clair Direct Drainage Collaborative Public Education Plan (PEP) which was reviewed and approved January 8, 3013 by MDEQ (See approval letter in Appendix B). The approved PEP includes a Permittee Specific Activity Action Table and Table 2 which together list the specific PEP activities that are to be implemented by the permittees and reported on individually in each permittee's progress reports. The Activity Action Table and Center Line's Table 2 are included in Appendix B- PEP of this SWMP. Center Line prioritized nine of the eleven topics excluding H – Septic System Maintenance and J – Management of Riparian Lands. Center Line does not have or allow septic systems within the City and there are no open drains so there are no areas within the City that could or would constitute riparian land. The 2011 Audit recommended prioritizing education making a connection between storm water and the water quality of local surface waters. This is topic B – Ultimate Storm Water Discharge Locations and Potential Impacts.

The PEP is included as part of the storm water management program (SWMP). The SWMP will be posted on The City's website for review and comment by the public when it is approved by the MDEQ. This information will include the contact information of the storm water manager to forward comments. The storm water manager will compile and track comments from the public including: commenter name, date, and comment. The SWMP upon review and approval by MDEQ can be found at:

http://centerline.gov/public-works/water

The City's website is used to explain the program and opportunities for the public to participate and provide input. Appendix B contains the PEP activities as specifically tailored to the City of Center Line.

Section VII.d. – Illicit Discharge Elimination Program (IDEP)

Overview

The purpose of the IDEP section of the SWMP is to effectively eliminate illicit discharges (including the discharge of sanitary wastewater) into to the separate storm water drainage system that is under the City's jurisdiction. The City owns or operates a total of 38 known discharge points that outlet to County drains under the jurisdiction of the MCPWO and 12 discharge points from

that outlet to County drains under the jurisdiction of the MCPWO and 12 discharge points from City-owned facilities to other MS4s or ultimately to County Drains. As noted previously, no nested jurisdictions are covered under the City's permit. Maps detailing the City's MS4 facilities are available for viewing in electronic digital and/or hardcopy form by contacting the City's Department of Public Works (DPW). Maps A-1 through A-10 identify the City's owned facilities discharge points and the overall City and Storm Sewer System Base Maps 1 through 10 identify the discharge points for the roadway and other surface drainage within the City. The maps, Table 1 and Table 1A (City owned facilities) in Appendix A provide the specific information regarding these discharge points required by the permit and for dry weather screening and TMDL monitoring. The City's IDEP program is detailed in Appendix C – IDEP.

By right of ownership, the City maintains the authority to inspect, investigate, and monitor suspected illicit discharges to the City's MS4, which include facilities located on City owned and operated property and the City's Act 51 administered roads within the urbanized area.

Section VII.e. – Construction Storm Water Runoff Control

Qualifying Local Soil Erosion & Sedimentation Control Programs

The City is a Part 91 Authorized Public Agency (APA) for soil erosion and sedimentation control compliance for its own projects regardless of size. Soil Erosion & Sedimentation Control for all other development within the City is regulated by the MCPWO. Even though the City acts as an APA for its own projects, site plans still must meet the requirements of the MCPWO. During construction, contractors are advised of the necessary soil erosion and sedimentation control measures that must be implemented for the project in question. City construction inspectors ensure that all measures are established and remain in place throughout the construction phases of the project.

Application for Part 91 permits for non-City owned construction projects involving earth disturbances one acre greater in size are required to be made to the MCPWO. Compliance with MCPWO's rules and regulations is required as a prerequisite to site plan approval under the terms of Code of Ordinances Appendix A – Zoning, Article VIII, Section 820 and Article X - Review Procedures and Requirements, Section 1000 – Site plan review for all districts. In addition, the City's draft Storm Water Standards Ordinance (See Appendix D) incorporates specific requirements in Section 501.B.

Construction Stormwater Runoff Control

City construction or redevelopment projects are implemented in manner such that runoff from the site is reduced to the greatest extent possible. Measures utilized may include holding basins, diverting water through grassed swales, etc. Waste such as building materials, concrete washout, chemicals, litter, and sanitary waste is controlled to prevent infiltration into the MS4. Consideration is given to phasing projects to limit the amount of exposed soils. Interim soils stabilization methods such as temporary seeding, mulching, etc. may be utilized as applicable.

Trained inspectors visit City construction project sites on a frequent basis to enforce required Soil Erosion and Sedimentation Control measures ensuring that discharges into the MS4 do not occur. All contractors are provided with contact information for the City's inspectors. Should a soil, sediment, or pollutant discharge occur, the contractors are required to contact a City inspector notifying him/her of the event so that remedial action can be prescribed and implemented in an expedient manner. In the event of a discharge into a connecting MS4, the applicable jurisdiction will be notified by the City inspectors. For projects not conducted by the City, the MCPWO is the regulating authority however the City coordinates the inspections with the County for these permitted activities.

Should there be a spill or release of pollutants such as pesticides, petroleum derivatives, construction chemicals or solid waste into the City's MS4, the MDEQ's Southeast Michigan District Office will be immediately contacted at 586-753-3700. Or, if after regular business hours, by calling the MDEQ's 24-Hour Pollution Emergency Alerting System at 800-292-4706 as referenced in Appendix D, Policy S3, Section III.

Complaints regarding City construction activities will be relayed to the on-site inspector for investigation, employing the procedures referenced in Section VII.a of this document and Policy S3, Section III. Complaints involving connecting MS4s will be addressed using these same procedures.

The City is the landowner or recorded easement holder in the case of its own construction projects and is cognizant of the State of Michigan Permit by Rule (Rule 323.2190).

Section VII.f. – Post-Construction Stormwater Control for New Developments and Redevelopment

Regulatory Mechanisms

The City is the regulating and enforcing authority for post-construction storm water control for all new developments and redevelopment projects within the City, including the City's own construction projects. Any improvements to the City's facilities, or any new facilities, which discharge directly to a County Drain are reviewed and approved by the MCPWO. This review would include post-construction water quality and quantity controls. This is the case for all projects throughout the City; and would apply to projects that disturb one or more acres, including projects less than an acre that are part of a larger development. The City's new projects, along with private development projects, are subject to the site plan review process specified in the Section 820 Stormwater Management of the City of Center Line Zoning Ordinance. Article XVIII. - Enforcement, Penalties And Other Remedies, Section 1800 addresses violations of the Zoning Ordinance. These excerpts from the Zoning Ordinance are included in Appendix D of the SWMP. In designing storm water management systems, the City's draft Storm Water Standards Ordinance (See draft Storm Water Standards Ordinance in Appendix D) provides specific requirements in Section 504 and Section 505 for flood control and water quality respectively.

Water Quality Treatment Performance Standard

The City's draft Storm Water Standards Ordinance Section 501.D.2 requires water quality control shall be provided on all new developments or redevelopments and may be accomplished with manufactured units, settling ponds/forebay, bio-filtration, or combination of systems. These Water Quality control systems:

a. must reduce post development total suspended solids (TSS) loadings by 80% or to not exceed solids loadings of 80 milligrams per liter.
b. must provide a minimum treatment volume equal to one inch of runoff from the directly contributing drainage areas.

Channel Protection Performance Standard

The City of Center Line does not have any open municipal or open County drains however, where channel protection is otherwise required the City's draft Storm Water Standards Ordinance Section 501.D.2.d provides that the development may propose incorporation of green infrastructure (i.e. Rain gardens, green (vegetated) roofs, permeable pavement, impervious cover removal, use of trees, etc.) This includes instances where site conditions (e.g., space limitations or tight soils that prevent infiltration) challenge or prohibit feasibility of maintaining the project site's pre-development runoff levels for all storms up to the 2-year, 24-hour event. Review of these proposals will be consistent with the "SEMCOG Low Impact Development Manual for Michigan, 2008" or current standards.

Site Specific Requirements

The City's requirements are addressed in the draft Storm Water Standard Ordinance Section 504.B allows for infiltration to be incorporated into a detention facility design, subject to review and approval by the City Engineer except in areas of soil or groundwater contamination as determined by and in coordination with the MDEQ.

Section 501.B of these draft standards require that land uses with potential for significant pollutant loading, including but not limited to: gas stations, commercial vehicle maintenance and repair, auto recyclers, recycling centers, and scrap yards, will require BMPs which address regulation of the specific hazard.

Long-Term Operation & Maintenance of BMPs

The City's draft Storm Water Standard Ordinance Section 501.B requires the Developer/Owner shall include a long-term operation and maintenance schedule for all permanent BMPs. A maintenance agreement between the Developer/Owner and the City is required for permanent BMPs which shall include but not be limited to: inspection of structural or vegetative BMPs, performance of maintenance and corrective actions when BMPs are neglected by the owner, and deed restrictions. All such maintenance agreements shall be binding on the property and shall remain in effect in the event the property ownership is transferred or sold.

Section VII.g. – Pollution Prevention / Good Housekeeping for Municipal Operations

Municipal Facility & Structural Stormwater Control Inventory

An inventory of The City's owned and operated facilities appears in Appendix A, Table 1A.

Facility-Specific-Stormwater Management

The City has implemented a procedure for assessing each of its facilities within the regulated defined urbanized area for the potential to discharge pollutants to surface waters of the State. The assessment will typically be updated/revised at minimum of 30 days prior to discharging stormwater from a new facility and within 30 days of determining a need to update/revise the facility assessment. The maintenance activities are conducted based on the standard operating procedures (SOPs) which are included in Appendix E – P2/GH.

Poor housekeeping practices discovered during an assessment will be corrected as soon as practical or based on the SWMP quarterly review.

The following table lists the City's facilities currently located within the regulated defined urbanized area and classifies the potential pollutant risk from each as high, medium, or low.

Facility Name	Structural Controls	Priority Level	BMP's Implemented
The City Hall/Municipal Offices	Discharge Points 1 Catch Basins	Low	Catch basin cleaning Parking lot sweeping E.coli Monitoring
The City. Fire Department Station	Discharge Points 1 Catch Basins	Low	Catch basin cleaning Parking lot sweeping
Center Line. Police Department	Discharge points Catch Basins	Low	Catch basin cleaning Parking lot sweeping
Center Line. DPW	Discharge points 2 Catch Basins 27	High	Catch basin cleaning CB Inserts (targeted) Parking lot sweeping
Stephens Sanitary Pump Station	Discharge Points 1	Low	Clean out catch basin Parking lot sweeping
Center Line Memorial Park	Discharge points Catch Basins	Low	Catch basin cleaning Pet Walking and Waste Prohibition E.coli Monitoring Parking lot sweeping
Lions Park	Discharge Points 1 Swale to discharge 1	Low	Pet Walking and Waste Prohibition E.coli Monitoring
Rotary Park	Discharge Points 1 Swale to discharge 1	Low	Pet Walking and Waste Prohibition E.coli Monitoring
City Library	Discharge Points 1 Catch Basins	Low	Catch basin cleaning Parking lot Cleaning
11 Mile Road Water Meter Pit	Surface Flow	Low	Sweeping and debris collection
Wood Avenue Water Meter Pit	Surface Flow	Low	Sweeping and debris collection
Kramer Homes Water Meter Pit	Surface Flow	Low	Sweeping and debris collection
Major Local Roads	Discharge Points Multi Catch Basins 241	Low	Catch basin cleaning Street Sweeping
Minor Local Roads	Discharge Points Multi Catch Basins 578	Low	Catch basin cleaning Street Sweeping

City DPW is the only facility within the City that presents a high potential pollutant risk. The City's standard operating procedures (SOPs) are included as Appendix E and Best Management Practices (BMPs) implementation activities are listed in the Action Plan as Appendix F.

Structural Stormwater Control Operation & Maintenance Activities

Appendix A, Table 1A lists the Structural Controls at each City owned and operated facility. The City maintains a total of 241catch basins within the City owned major roads and 578 of catch basins within the City owned local roads. The maintenance activities are conducted based on the standard operating procedures (SOPs) which are included in Appendix E – P2/GH.

Collected material is transported to the City's DPW facilities where the liquids are separated from the solids and discharged into a designated sanitary manhole. The solids are offloaded into two GFL Environmental dumpsters (one – 10 Cyd and one – 20 Cyd) for storage and subsequent transportation to a sanitary landfill as documented on a Non-Hazardous Manifest. The City disposes of the material through a licensed disposal company (i.e. Waste Management, Inc.).

Municipal Operations & Maintenance Activities

The City owns the major local, local roads and city-owned facility parking lots of their MS4. Repairs to parking lots or other municipal maintenance activities are done on an as needed basis by either the City DPW or a licensed contractor. A City representative is on site to oversee the work and ensure that left over material and other associated pollutants are disposed of, or stored properly at the DPW facility.

During cold weather operations the City applies road salt as weather conditions dictate the City's major local roads, local roads and City owned and operated parking lots per the corresponding SOPs E.11 and E.13 in Appendix E. Vehicle maintenance and washing is conducted by DPW staff or other City employees per the SOP E.4 in Appendix E trained on stormwater pollution prevention.

Managing Vegetated Properties

The City of Center Line manages vegetated properties according to the SOP E.10 in Appendix E.

Employee Training

Maintenance staff have been trained on stormwater pollution prevention and good housekeeping at least once per permit cycle. New employees are trained within the first year of employment. Employees will be trained using MDEQ stormwater on demand training videos that are found on their website and required topics will be covered along with Monthly Safety Briefings. All topics related to stormwater pollution prevention/good housekeeping of municipal facilities and activities will be covered during the training.

Contractor Requirements & Oversight

City-hired contractors performing municipal operation and maintenance are contractually required to comply with all pollution prevention and good housekeeping BMPs as are applicable to the activities performed and as inspected daily by the storm water manager or designee.

Section VII.h. – Total Maximum Daily Load (TMDL) Implementation

A study or analysis that calculates the maximum amount of a pollutant that a water body can receive and still meet water quality standards. The TMDL establishes a pollutant budget and then allocates portions of the overall budget to the pollutant's sources.

Total Maximum Daily Loads (TMDLs) are developed by the states for water bodies that are not meeting water quality standards. TMDL development is required by "Section 303(d) of the federal Clean Water Act and the United States Environmental Protection Agency's (USEPA's) Water Quality Planning and Management Regulations (Title 40 of the Code of Federal Regulations [CFR], Part 130)".

The TMDL process sets the allowable levels of pollutants for a body of water, and provides the states with a basis for determining the pollution reductions necessary to restore and maintain the quality of their water resources.

Escherichia coli (E. coli) is a type of bacteria (single cell organism) that is used by the State of Michigan as a water quality indicator. When E. coli is found in surface waters, it means that there has been fecal contamination. While E. coli itself may be harmful to human health, other disease causing organisms might also be present. Once these pathogens are in a stream or lake, they can infect humans through ingestion or skin contact, resulting in diseases such as gastroenteritis (diarrhea), giardia, hepatitis, or cholera

For the water bodies impacted or potentially impacted by the Center Line City MS4, the following TMDL's have been established:

E. coli Red Run Drain and Bear Creek	TMDL	ID-58
E. coli Clinton River	TMDL	ID-91

The BMP's provided in Appendix F, Action Plan provide for the City to minimize the impact of the storm water discharges from the City MS4 to the Maximum Extent Possible (MEP). Monitoring will be performed at least twice during the permit cycle or as a necessary progression from dry weather screening. Wet weather sampling will be conducted within 30 to 60 minutes of the start of a wet weather event in order to capture the first flush. A wet weather event is defined as a precipitation event that produces at least 0.25" of rain over a 24-hour period and are scheduled to be completed the 2nd and 4th year of the permit cycle during the growth season. Appendix C provides the IDEP and TMDL plan with procedures for evaluating and prioritizing BMPs.

The TMDL monitoring locations are listed in Tables 1 and 1A in "Appendix A – Maps and Tables" and are displayed graphically on the maps provided in the appendix. These points are incorporated into the City's GIS which provides the database for the City's mapping system.

Compliance with all applicable requirements set forth in the Federal Act, Parts 31 and 41 of the Michigan Act, and related regulations and rules is required under the permit. All instances of noncompliance shall be reported as follows:

a. 24-hours reporting - Any noncompliance which may endanger health or the environment (including maximum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.

b. other reporting - The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include:

1) A description of the discharge and cause of noncompliance; and

2) The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

Section VII.i. – Action Plan

Phase II communities are required to develop and implement a storm water management plan with the following six minimum control measures:

- **Public Education and Outreach** - Distributing educational materials and performing outreach to inform citizens about the impacts polluted stormwater runoff discharges can have on water quality.
- **Public Involvement and Participation** - Providing opportunities for citizens to participate in program development, implementation, and review, including effectively publicizing public hearings or participation.
- **Illicit Discharge Detection and Elimination** - Developing and implementing a plan to detect and eliminate illicit discharges to the storm drain system including illicit connections and illegal dumping.
- **Construction Site Runoff Control** - Developing, implementing, and enforcing an erosion and sediment control program for construction activities that disturb one or more acres of land.
- **Pollution Prevention / Good Housekeeping for Municipal Operations** - Developing and implementing a program to prevent or reduce pollutant runoff from municipal operations. (This is a primary focus of this handbook.)
- **Post-Construction Stormwater Management in New Development and Redevelopment** - Developing, implementing, and enforcing a program to address discharges of stormwater runoff from new and redevelopment areas.

The action plan summarizes the implementation activities necessary to meet these measures.

City of Center Line

Storm Water Management Program (SWMP)

Appendix A

Maps and Tables

November 2007
Revised November 28, 2018

Urbanized Area Maps
Table 1: City of Center Line IDEP / TMDL Monitoring Location
Table 1A: City Owned Facilities and IDEP/TMDL Monitoring Location
A.01 DPW Storm Sewer Map
A.02 City Hall, Public Safety, Fir Department Storm Sewer Map
A.03 Library Storm Sewer Map
A.04 Memorial Park
A.05 Rotary Park
A.06 Lions Park
A.07 Stephens Pump Station
A.08 Wood Ave Meter Pit
A.09 11 Mile Meter Pit
A.10 Kramer Homes Meter Pit
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Base Map No. 1
Base Map No. 2
Base Map No. 3
Base Map No. 4
Base Map No. 5
Base Map No. 6
Base Map No. 7
Base Map No. 8
Base Map No. 9
Base Map No. 10
Map 11 IDEP Tracking
MS4 System Cleaning Map

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CIVIL ENGINEERS SURVEYORS ARCHITECTS
51301 SCHOENHERR RD. SHELBY TOWNSHIP, MI 48315
www.aewinc.com p(586)726-1234

PLOT DATE: August 14, 2018	DRAWING DATE: August 14, 2018		
PLOT SCALE: NTS	DRAWING SCALE: NTS		
PLOT CONFIG: 11 X 17	PROJECT NO: 0170-0382		
ATTACH XREF: NONE	DRAWING FILE: FacilityMaps.mxd		
	DRAWN BY: JMM	CHK'D BY: PG	

City of Center Line

Department of Public Works
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REFERENCE SHEET NUMBER
1

CAUTION

THIS MAP IS INTENDED FOR REFERENCE PURPOSES ONLY

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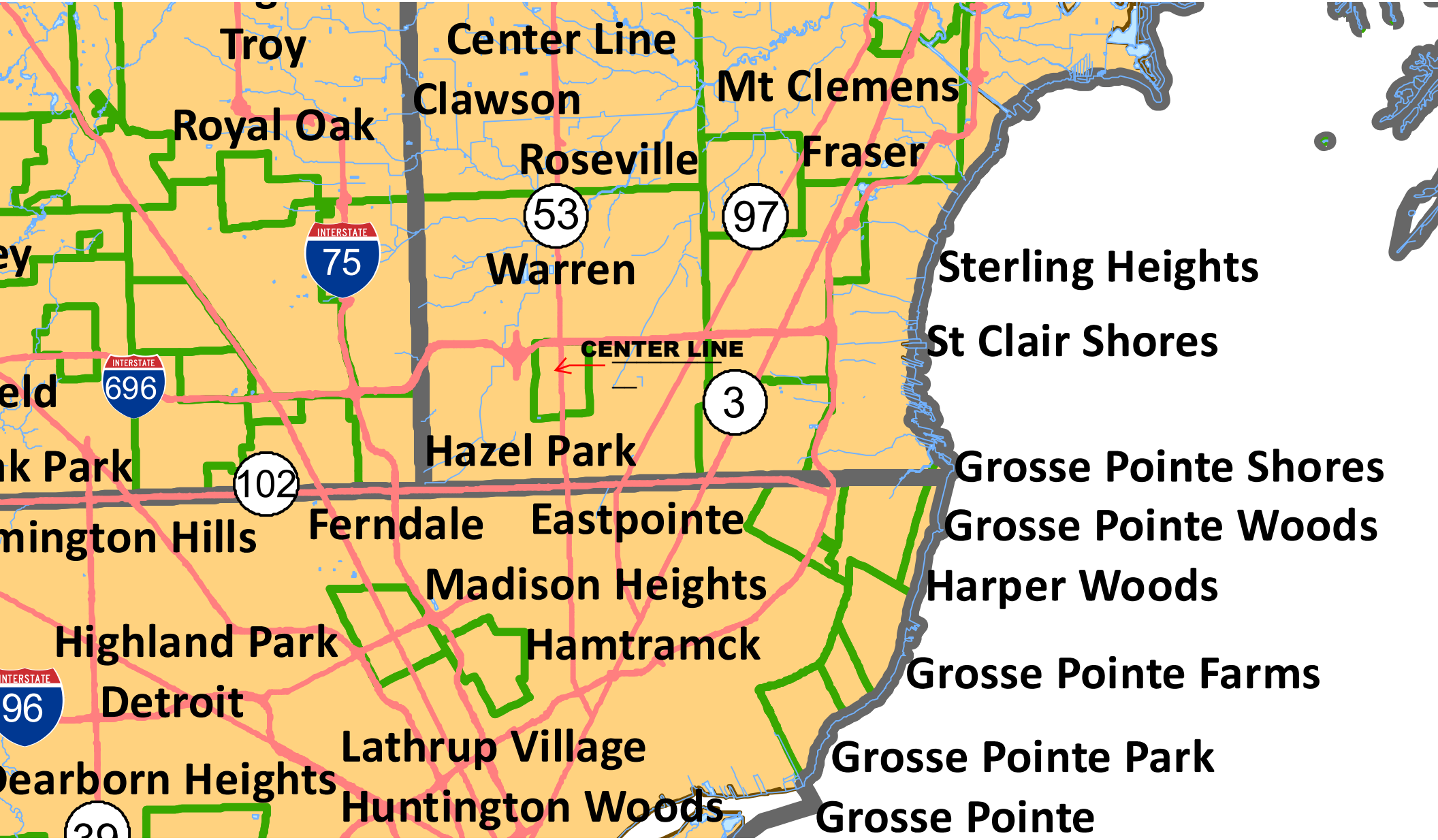
CENTER LINE - URBANIZED AREA MAP



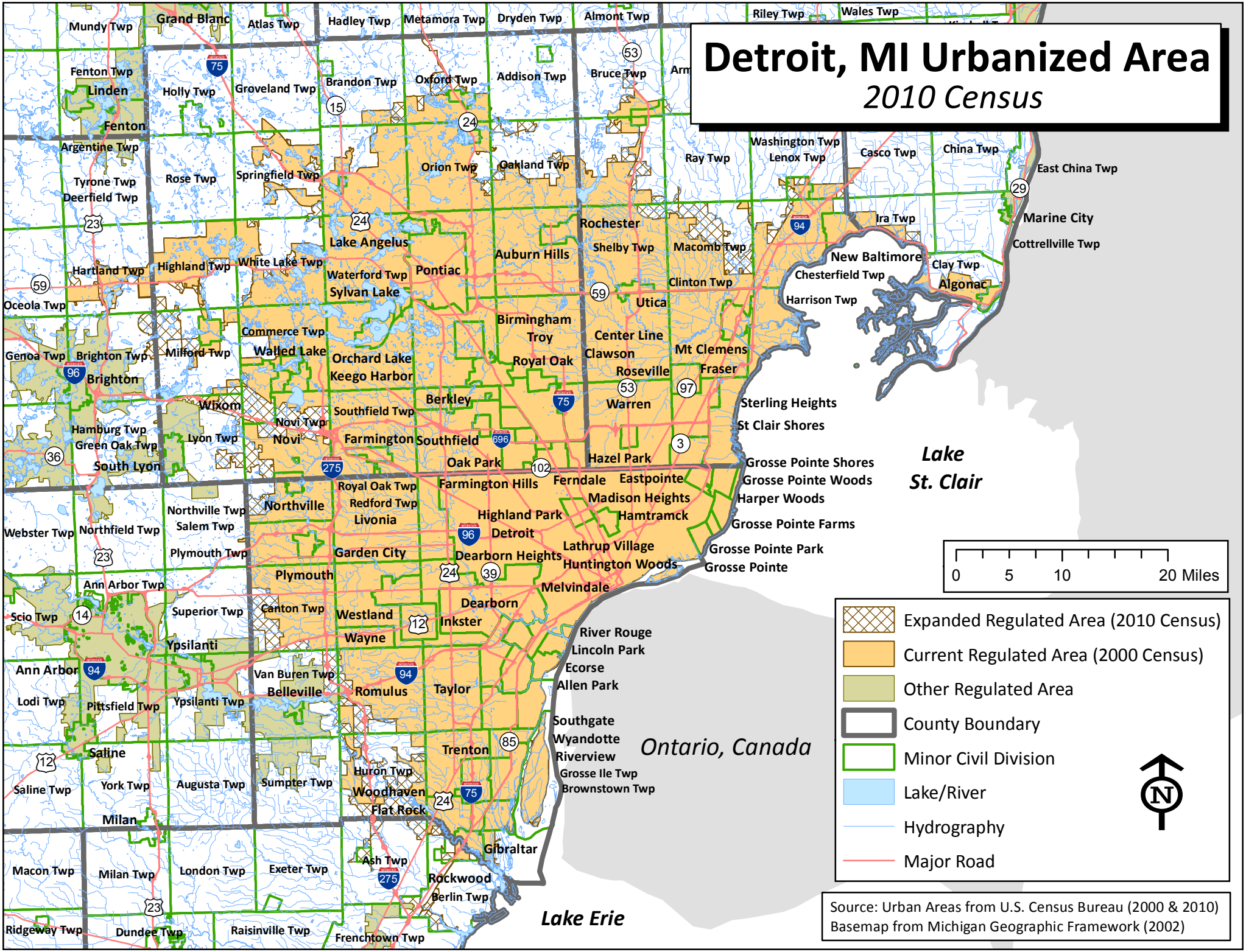
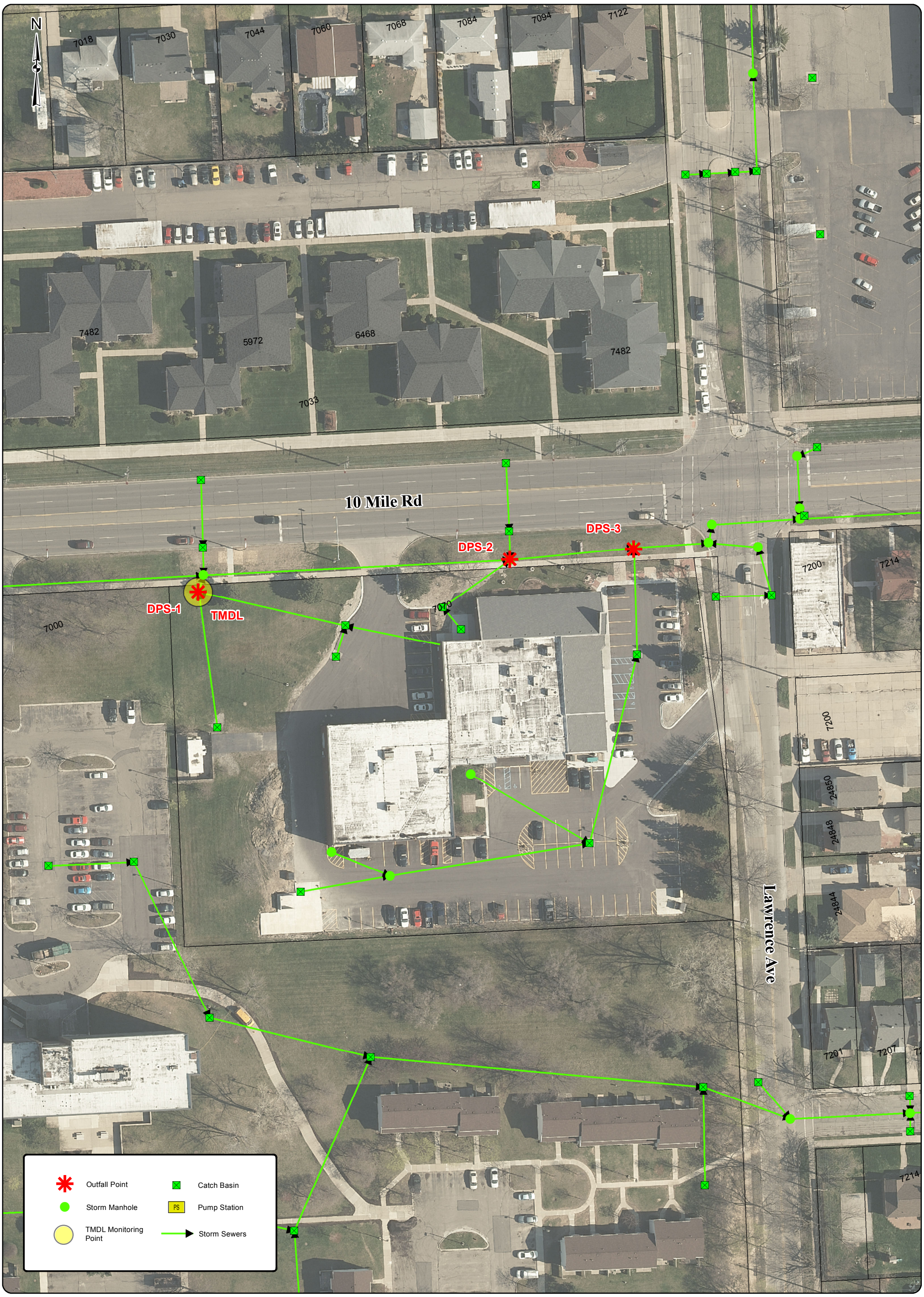

Detroit, MI Urbanized Area
2010 Census
Mundy Twp
Grand Blanc
Atlas Twp
Hadley Twp
Metamora Twp
Dryden Twp
Almont Twp
Riley Twp
Wales Twp
Fenton Twp
Linden
Holly Twp
Groveland Twp
Brandon Twp
Oxford Twp
Addison Twp
Bruce Twp
Fenton
Argentine Twp
Tyrone Twp
Deerfield Twp
Rose Twp
Springfield Twp
Orion Twp
Oakland Twp
Ray Twp
Washington Twp
Lenox Twp
Casco Twp
China Twp
East China Twp
Marine City
Cottrellville Twp
Ira Twp
Rochester
Shelby Twp
Macomb Twp
Lake Angelus
Auburn Hills
New Baltimore
Clay Twp
Algonac
Chesterfield Twp
Harrison Twp
Hartland Twp
Highland Twp
White Lake Twp
Waterford Twp
Pontiac
Sylvan Lake
Clinton Twp
Utica
Oceola Twp
Birmingham
Troy
Commerce Twp
Center Line
Clawson
Mt Clemens
Genoa Twp
Brighton Twp
Milford Twp
Walled Lake
Orchard Lake
Royal Oak
Roseville
Fraser
Keego Harbor
Brighton
Berkley
Warren
Sterling Heights
Wixom
Southfield Twp
St Clair Shores
Hamburg Twp
Novi Twp
Green Oak Twp
Lyon Twp
Novi
Farmington
Southfield
Hazel Park
South Lyon
Oak Park
Grosse Pointe Shores
Lake St. Clair
Royal Oak Twp
Farmington Hills
Ferndale
Eastpointe
Grosse Pointe Woods
Northville Twp
Northville
Redford Twp
Madison Heights
Harper Woods
Livonia
Highland Park
Hamtramck
Salem Twp
Webster Twp
Northfield Twp
Detroit
Grosse Pointe Farms
Plymouth Twp
Garden City
Lathrup Village
Grosse Pointe Park
Dearborn Heights
Huntington Woods
Grosse Pointe
Plymouth
Ann Arbor Twp
Melvindale
Dearborn
Scio Twp
Superior Twp
Canton Twp
Westland
Inkster
River Rouge
Wayne
Ypsilanti
Lincoln Park
Ecorse
Ann Arbor
Van Buren Twp
Allen Park
Lodi Twp
Pittsfield Twp
Ypsilanti Twp
Belleville
Romulus
Taylor
Southgate
Wyandotte
Ontario, Canada
Saline
Trenton
Riverview
Huron Twp
Grosse Ile Twp
Saline Twp
York Twp
Augusta Twp
Sumpter Twp
Brownstown Twp
Woodhaven
Flat Rock
Milan
Gibraltar
Ash Twp
Macon Twp
Milan Twp
London Twp
Exeter Twp
Rockwood
Berlin Twp
Lake Erie
Ridgeway Twp
Dundee Twp
Raisinville Twp
Frenchtown Twp
0 5 10 20 Miles
Expanded Regulated Area (2010 Census)
Current Regulated Area (2000 Census)
Other Regulated Area
County Boundary
Minor Civil Division
Lake/River
Hydrography
Major Road
N
Source: Urban Areas from U.S. Census Bureau (2000 & 2010)
Basemap from Michigan Geographic Framework (2002)

Table 1 : City of Center Line Outfall / Discharge Points - IDEP/ TMDL Monitoring Locations

Base Map No.	Old ID	Outfall / Discharge Point Number	(Connection Type) Outfall/Blind Tap/ Manhole	Base Map 1st upstream Manhole Number	IDEP Sampling Point Number	IDEP Sampling Point Base Map Number	North	East	Outfall / Discharge Points' MS4	Drain or Waterbody	Sub-Watershed	BMPs	Priority Level	TMDL Monitor Point	Schedule
1	L10	CTL-L-001	Blind Tap	4-2	L10	4-2-1	364216.495	13487500.334	Macomb County Public Works	Lorraine Drain	Red Run Sub-Watershed	Catch Basing Cleaning	Low	CTL-L-001	2nd and 4th year of the Permit Cycle (During the Growth Season)
1	L20	CTL-L-002	4-3	4-3-1	L20	4-3-1	363797.038	13487508.990	Macomb County Public Works	Lorraine Drain	Red Run Sub-Watershed		Low		
1	L30	CTL-L-003	4-4	4-4-1	L30	4-4	363441.185	13487524.789	Macomb County Public Works	Lorraine Drain	Red Run Sub-Watershed		Low		
2	L40	CTL-L-005	4-6	4-6-1	L40	4-6	361696.056	13487580.986	Macomb County Public Works	Lorraine Drain	Red Run Sub-Watershed		Low	CTL-L-005	2nd and 4th year of the Permit Cycle (During the Growth Season)
2	L50	CTL-L-006	4-7	4-7-1	L50	4-7-1	361454.401	13487587.809	Macomb County Public Works	Lorraine Drain	Red Run Sub-Watershed		Low		
5	L60	CTL-L-011	3-21	5-1	L60	5-2	356603.029	13487753.327	Macomb County Public Works	Lorraine Drain	Red Run Sub-Watershed	Street Sweeping	Low		
5	L100	CTL-L-012	3-21	3-20	L100	3-8-2	356603.029	13487753.327	Macomb County Public Works	Lorraine Drain	Red Run Sub-Watershed		Low	CTL-L-012	2nd and 4th year of the Permit Cycle (During the Growth Season)
1	R10	CTL-R-014	2-1-3	2-1-4	R10	2-1-6	364191.073	13485287.757	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low		
6	R120	CTL-R-023	Blind Tap	2-2-1	R120		363918.988	13484388.401	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low		
6	R20	CTL-R-025	Blind Tap	2-4-1	R20	2-4-1	363611.064	13484404.828	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low		
6	R130	CTL-R-028	Blind Tap	2-6-1	R130		363302.429	13484416.723	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed	Parking Lot Cleaning	Low		
6	R30	CTL-R-030	2-7	2-7-1	R30	2-7-3	362989.559	13484435.801	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low	CTL-R-030	2nd and 4th year of the Permit Cycle (During the Growth Season)
7	R40	CTL-R-040A	Blind Tap	2-13-1	R40	2-13-1	361871.213	13484481.098	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low		
7	R150	CTL-R-043	Blind Tap	2-14-1	R150		361568.71	13484496.122	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low	CTL-R-043	2nd and 4th year of the Permit Cycle (During the Growth Season)
7	R90	CTL-R-046	Blind Tap	2-16-1	R90	2-16-3	361003.406	13484520.654	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low		
7	R100	CTL-R-047	Blind Tap	2-17-1	R100	2-17-1	360721.225	13484532.450	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed	Animal Waste Signage	Low		
8	R50	CTL-R-051	2-18	2-18-1	R50	2-18-1	360414.185	13484547.317	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low		
8	R110	CTL-R-059	Blind Tap	2-21-1A	R110	2-21-3	359773.641	13484575.139	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low		
8	R70	CTL-R-067	2-26	2-26-1	R70	2-26-1	359160.824	13484601.433	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low		
9	R80	CTL-R-069	2-26	2-27	R80	2-28	359106.621	13484605.165	Macomb County Public Works	Center Line Relief Drain	Red Run Sub-Watershed		Low		
1	T10	CTL-T-076	1-2	1-2-1	T10		363920.873	13484452.929	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed	Pet Waste Stations	Low		
1	T20	CTL-T-085	1-4	1-4-1	T20		363634.337	13484465.172	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
1	T30	CTL-T-093	1-6	1-6-1	T30		363311.878	13484479.079	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
1	T40	CTL-T-097	1-7	1-7-1	T40		363017.532	13484492.690	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
1		CTL-T-104	1-9	1-9-1			362736.422	13484504.583	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
2	T50	CTL-T-110	1-10	1-10A	T50		362467.081	13484516.406	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed	Regular pickup of waste materials	Low		
2	T60	CTL-T-119	1-11	1-11-1	T60		362160.415	13484530.120	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
2	T70	CTL-T-131	1-14	1-14-1	T70		361589.669	13484555.236	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
2	T80	CTL-T-142	1-15	1-15-1	T80		361331.679	13484570.276	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low	CTL-T-142	2nd and 4th year of the Permit Cycle (During the Growth Season)
3	T90	CTL-T-153	1-17	1-17A	T90		360938.914	13484584.363	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
3	T100	CTL-T-162	1-18	1-18-1	T100		360591.903	13484599.099	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed	E.coli Monitoring	Low		
3	R60	CTL-T-165	1-19	1-19-1	R60	1-19-2	361421.679	13484604.516	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low	CTL-T-165	2nd and 4th year of the Permit Cycle (During the Growth Season)
3	T110	CTL-T-175	1-21	1-21A	T110		359867.935	13484631.264	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
3	T120	CTL-T-179	1-22	1-22-1	T120		359615.664	13484642.789	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
4	T130	CTL-T-185	1-25	1-25A	T130		358858.297	13484682.259	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low	CTL-T-185	2nd and 4th year of the Permit Cycle (During the Growth Season)
4	L140	CTL-T-195	1-28	3-2-1	L140	3-2-3	358018.285	13484732.607	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
5		CTL-T-197	1-29	1-29-1			357766.319	13484727.336	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		
5		CTL-T-203	1-31	1-31-1			357308.909	13484747.030	Macomb County Public Works	Center Line Tile Drain	Red Run Sub-Watershed		Low		

Table 1A: City of Center Line MS4 owned Facilities - IDEP/ TMDL Monitoring Locations

Map No.	Base Map No.	Facility Name	Address	C.B.	Outfall / Discharge Point	Latitude	Longitude	Outfall / Discharge Points' MS4	Drain or Waterbody	Sub-Watershed	BMPs	TMDL Monitoring Point	Priority Level	Schedule
1	8	DPW	6685 E. 10 Mile Rd, Center Line, MI	9	DPW-1	42.477727	-83.037079	Center Line MS4 - Macomb: Sherwood, N. of 10 Mile Rd	Center Line Relief Drain	Red Run Sub-Watershed	Catch basin cleaning, CB Inserts (targeted), Parking lots sweeping,	DPW-1	High	2nd and 4th year of the Permit Cycle (During the Growth Season)
2	9	Fire Department Station	7070 E. 10 Mile Rd, Center Line, MI	5	DPS-1	42.477709	-83.033838	Center Line MS4 - Macomb: 10 Mile Rd, W. of Lawrence	Center Line Relief Drain	Red Run Sub-Watershed	Catch basin cleaning, Parking lots sweeping, E.coli monitoring	DPS-1	Low	2nd and 4th year of the Permit Cycle (During the Growth Season)
		City Hall/ Municipal Offices	7070 E. 10 Mile Rd, Center Line, MI	2	DPS-2	42.477153	-83.032885	Center Line MS4 - Macomb: 10 Mile Rd, W. of Lawrence	Center Line Relief Drain	Red Run Sub-Watershed	Catch basin cleaning, Parking lots sweeping			
		Police Department	7070 E. 10 Mile Rd, Center Line, MI	6	DPS-3	42.477174	-83.032506	Center Line MS4 - Macomb: 10 Mile Rd, W. of Lawrence	Center Line Relief Drain	Red Run Sub-Watershed	Catch basin cleaning, Parking lots sweeping			
3	8	Library	7345 Weingartz, Center Line, MI	2	CPL-1	42.479353	-83.028785	Center Line MS4 - Macomb: Paul G Hazen & Weingartz	Center Line Relief Drain	Red Run Sub-Watershed	Catch basin cleaning, Parking lots sweeping	CPL-1	Low	2nd and 4th year of the Permit Cycle (During the Growth Season)
4	8	Memorial Park	25355 Lawrence, Center Line, MI	39	CMP-1	42.481287	-83.035740	Center Line MS4 - Macomb: Engleman W. of Lawrence	Center Line Relief Drain	Red Run Sub-Watershed	Catch basin cleaning, Animal Waste Signage and Pet Waste Stations, E.coli Monitoring, Parking lot sweeping	CMP-2	Low	2nd and 4th year of the Permit Cycle (During the Growth Season)
					CMP-2	42.481326	-83.034278	Center Line MS4 - Macomb: Engleman W. of Lawrence	Center Line Relief Drain	Red Run Sub-Watershed				
					CMP-3	42.480049	-83.032241	Center Line MS4 - Macomb: Lawrence at Weigand	Center Line Relief Drain	Red Run Sub-Watershed				
					CMP-4	42.479959	-83.037152	Center Line MS4 - Macomb: Sherwood & Braun	Center Line Relief Drain	Red Run Sub-Watershed				
5	10	Rotary Park	2394 1 Lawrence, Center Line, MI	4	RP-1	42.471730	-83.032302	Center Line MS4 - Macomb: Lawrence and Superior	Center Line Tile Drain	Red Run Sub-Watershed	Animal Waste Signage and Pet Waste Stations, E.coli Monitoring	RP-1	Low	2nd and 4th year of the Permit Cycle (During the Growth Season)
6	5	Lions Park	State Park @ MacArthur, Center Line, MI	0	Surface Drainage			Center Line MS4 - Macomb: State Park & MacArthur ROW's	Center Line Tile Drain	Red Run Sub-Watershed	Animal Waste Signage and Pet Waste Stations, E.coli Monitoring		Low	
7	10	Stephens Pump Station	23857 Van Dyke Ave, Center Line, MI	3	SPS-1	42.470138	-83.027544	Center Line MS4 - Macomb: Stephens Rd, W. of Van Dyke	Lorraine Drain	Red Run Sub-Watershed	Catch basin cleaning, Parking lots sweeping	SPS-1	Low	2nd and 4th year of the Permit Cycle (During the Growth Season)
8	10	Woods Meter Pit	23795 Van Dyke Ave, Center Line, MI	0	Surface Drainage			MDOT MS4 - Van Dyke M-53					Low	
9	1	11 Mile Road Meter Pit	NE Corner 11 Mile @ Van Dyke, Center Line, MI	0	Surface Drainage			Center Line MS4 - Macomb: Van Dyke & EB 11 Mile Rd ROW's	Lorraine Drain	Red Run Sub-Watershed			Low	
10	4	Kramer Homes Meter Pit	24642 Dewey St, Center Line, MI	0	Surface Drainage			Center Line MS4 - Macomb: 10 Mile Road, W. of Lorraine	Center Line Relief Drain	Red Run Sub-Watershed			Low	



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City of Center Line

City Hall, Public Safety, Fire Department
7070 E. 10 Mile Rd., Center Line, MI

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Center Line Public Library
7345 Weingartz St., Center Line, MI

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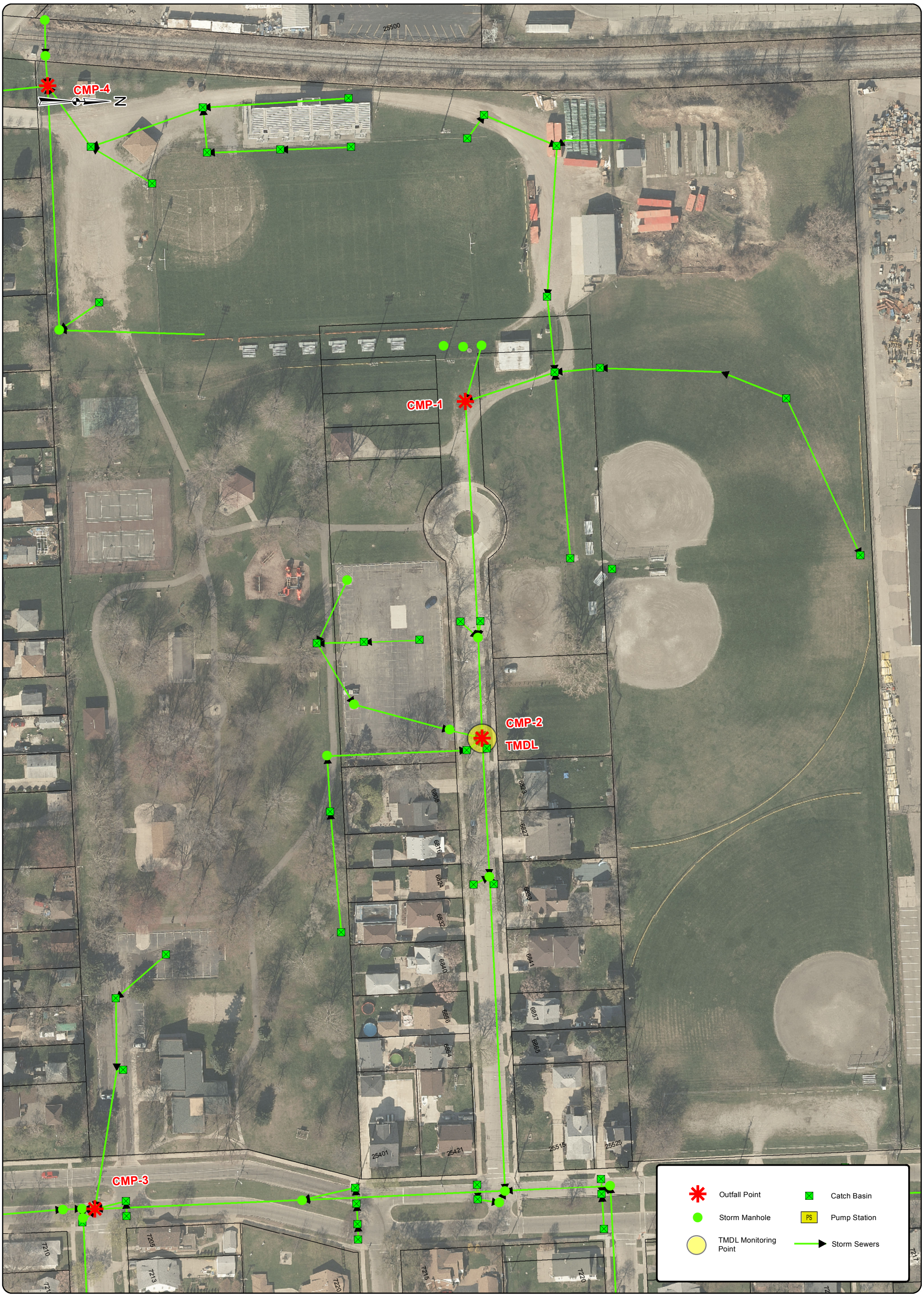

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City of Center Line

Memorial Park
25355 Lawrence Ave., Center Line, MI

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City of Center Line

Rotary Park
23941 Lawrence Ave., Center Line, MI

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City of Center Line

Lions Park
State Park @ MacArthur., Center Line, MI

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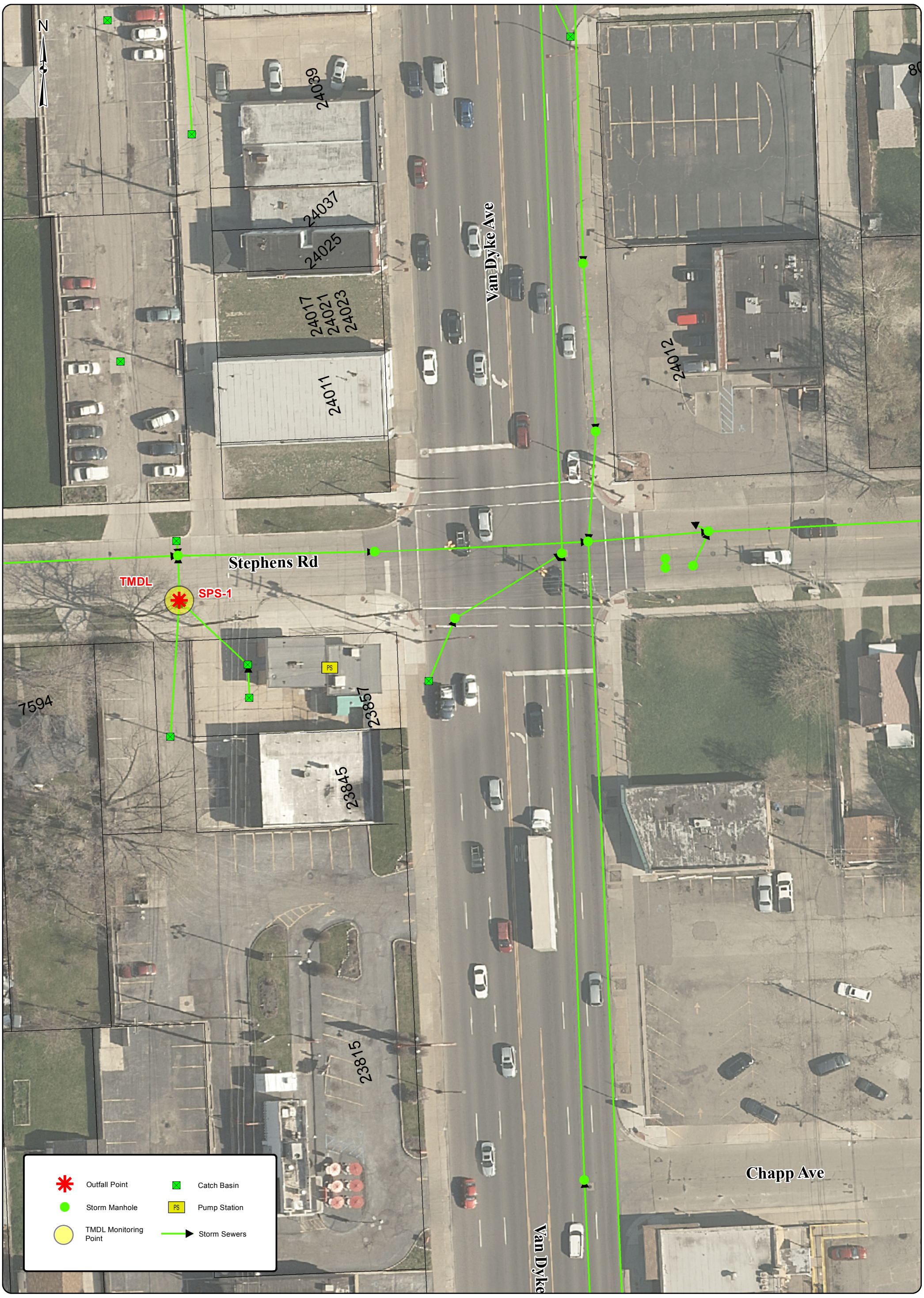

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City of Center Line

Stephens Rd. Pump Station
23857 Van Dyke Ave., Center Line, MI

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City of Center Line

Wood Ave. Meter Pit
23795 Van Dyke Ave., Center Line, MI

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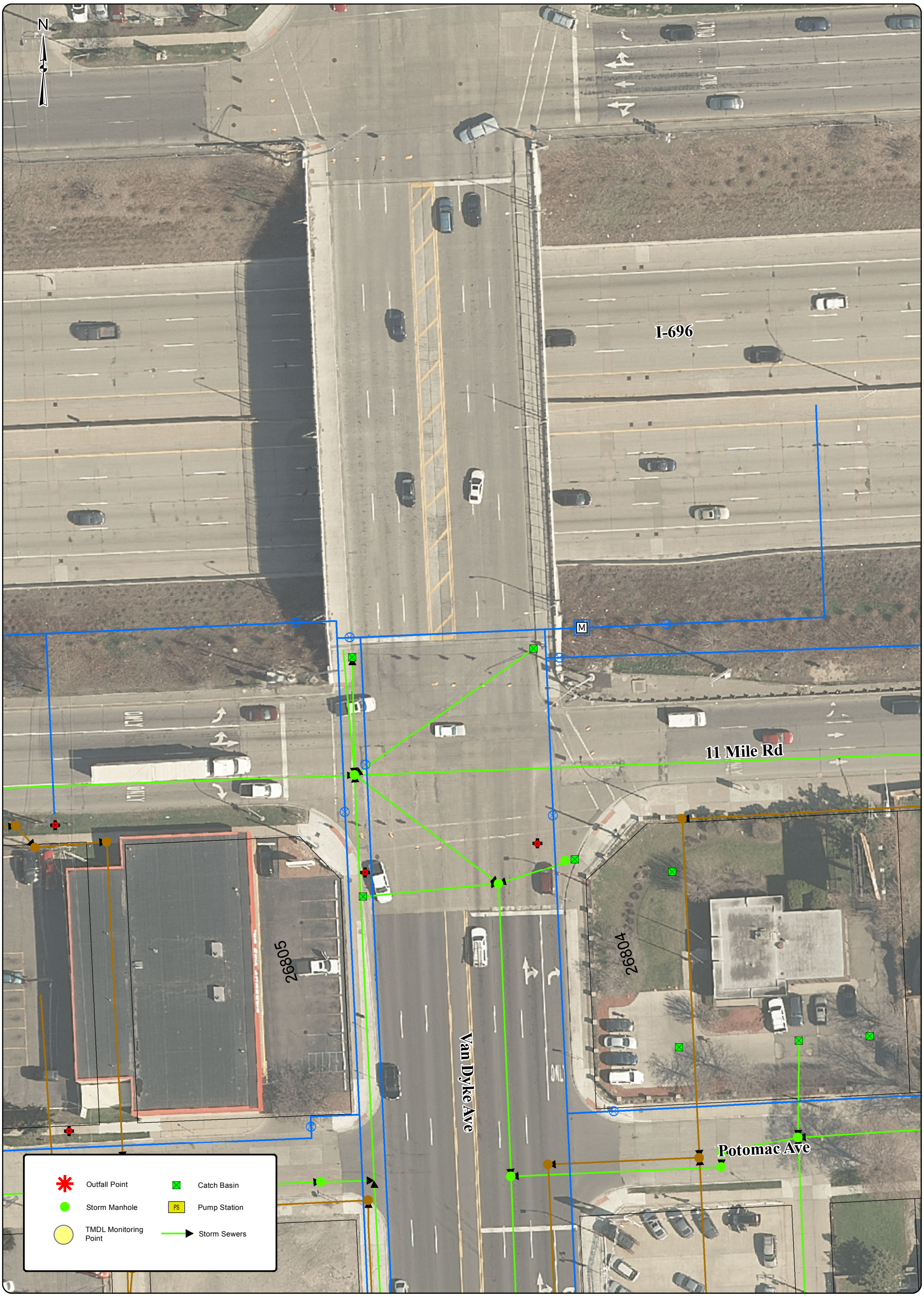

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City of Center Line

11 Mile Rd. Meter Pit
11 Mile @ Van Dyke Ave., Center Line, MI

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City of Center Line

Kramer Homes Meter Pit
24642 Dewey St., Center Line, MI

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City of Center Line

Sanitary and Storm Sewer Map

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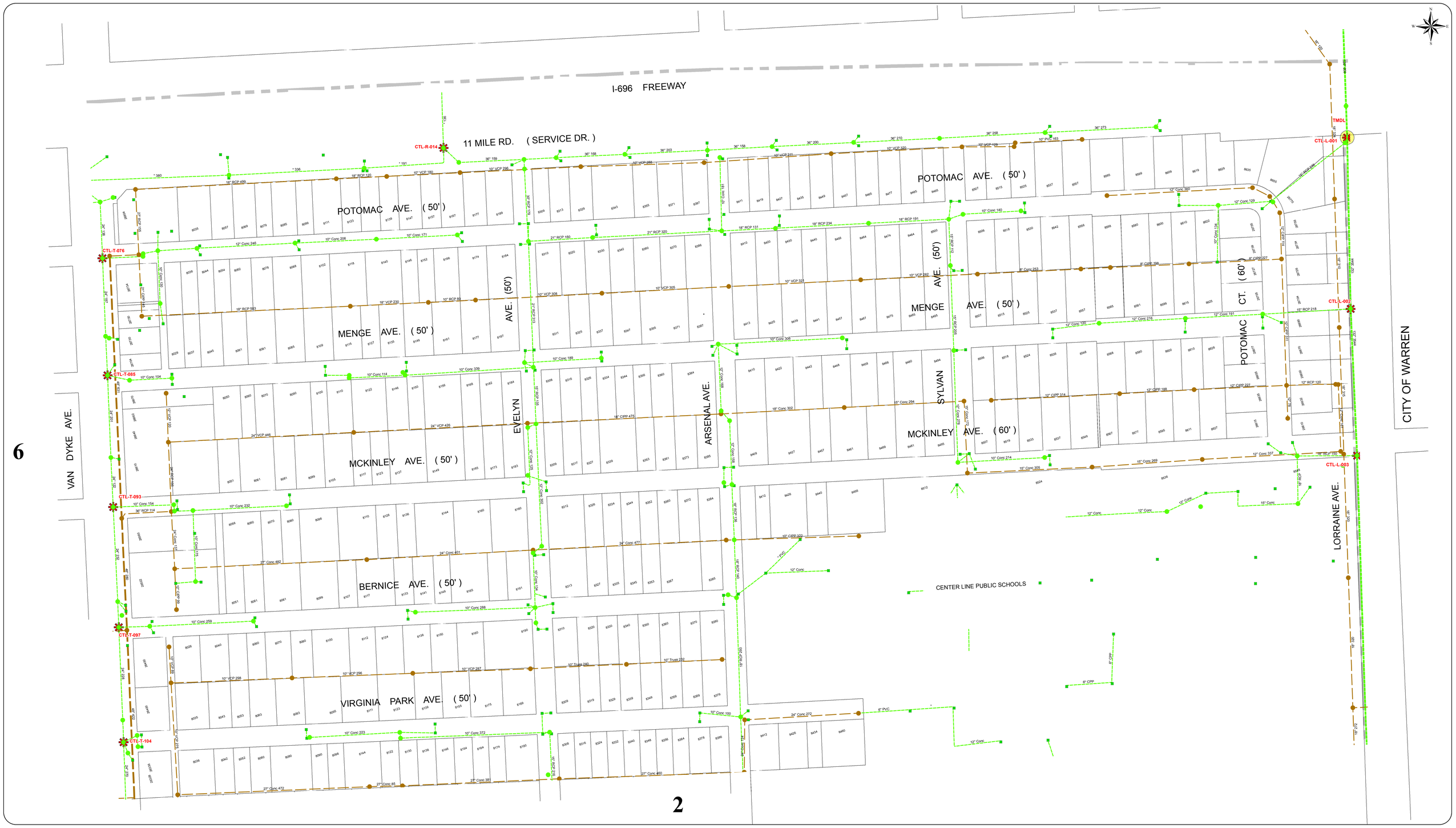

- Outfall Point
- TMDL Monitoring Point
- Sanitary Manhole
- Storm Manhole
- Catch Basin
- Pump Station
- Sanitary Sewer 6" to 42"
- Sanitary Sewer 48" & Above
- Storm Sewer 6" to 42"
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City of Center Line

Sanitary and Storm Sewer Map

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CITY OF CENTER LINE BASEMAP NO. 1

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Outfall Point
TMDL Monitoring Point
Sanitary Manhole
Storm Manhole
Catch Basin
Pump Station
Sanitary Sewer 6" to 42"
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CITY OF CENTER LINE BASEMAP NO.
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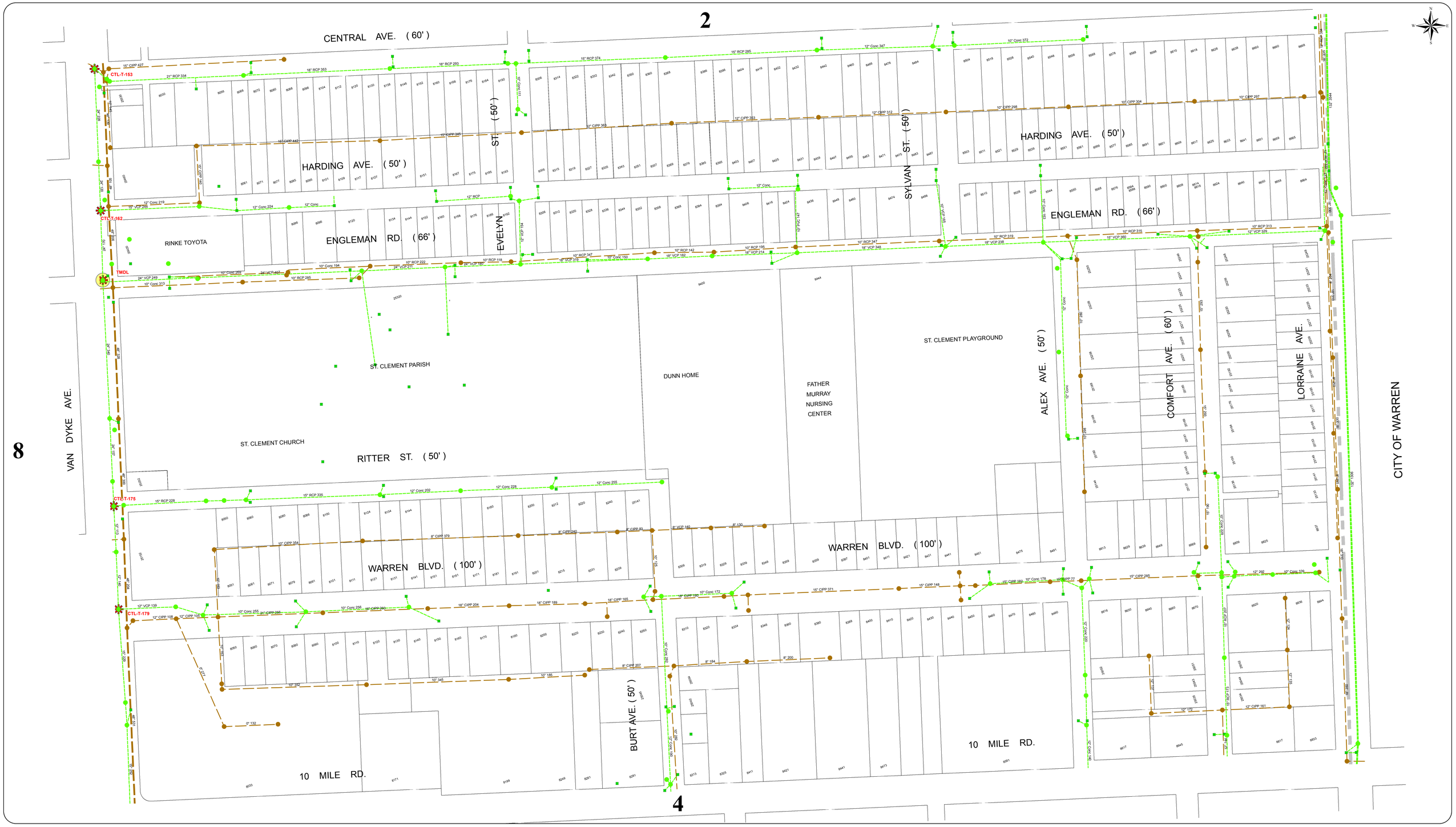

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CITY OF CENTER LINE BASEMAP NO. 3

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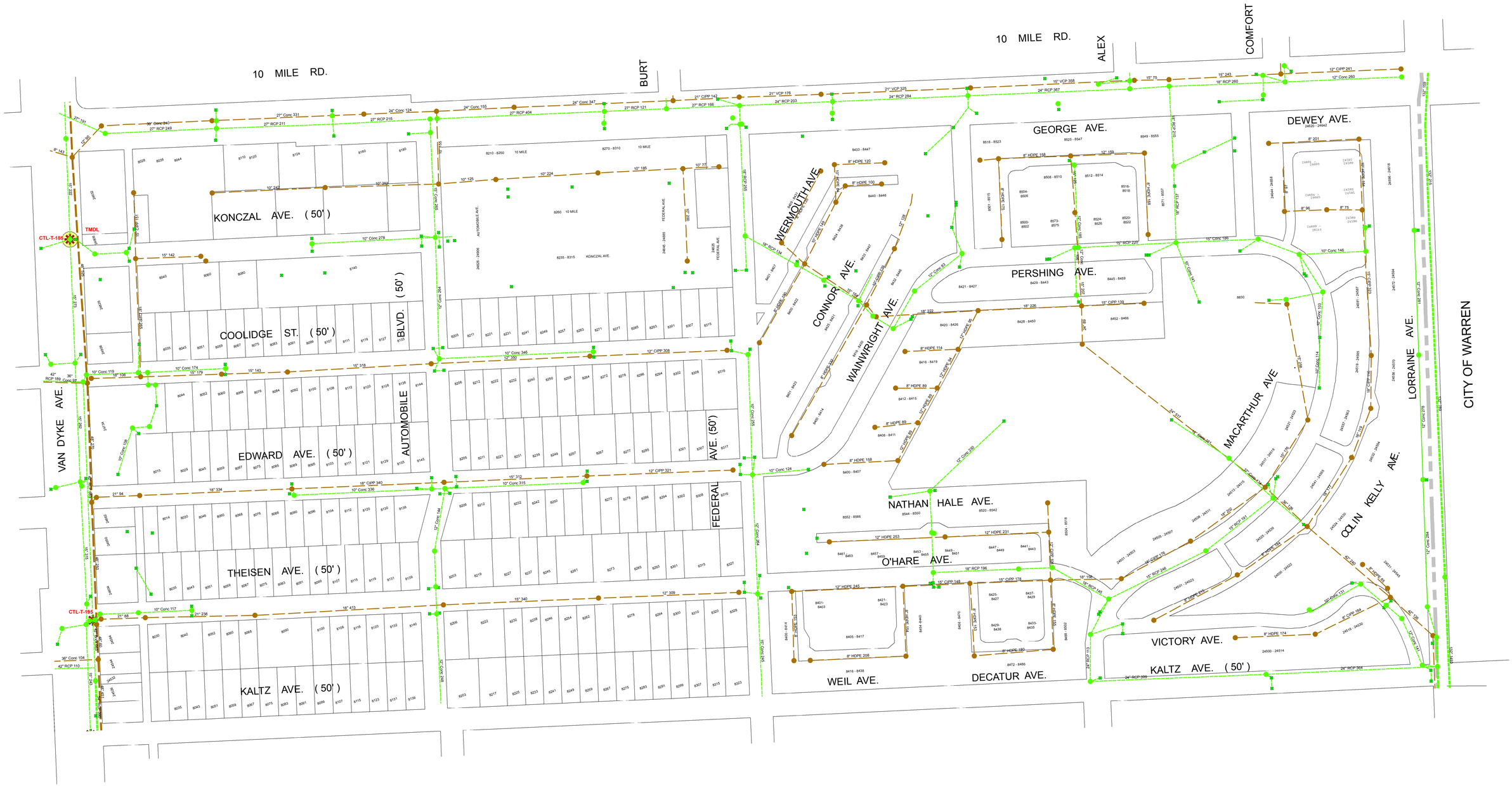

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Outfall Point
TMDL Monitoring Point
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THE MICHIGAN CITY OF CENTER LINE
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City of Center Line

Sanitary and Storm Sewer Map

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City of Center Line

Sanitary and Storm Sewer Map

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City of Center Line

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City of Center Line

Sanitary and Storm Sewer Map

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City of Center Line

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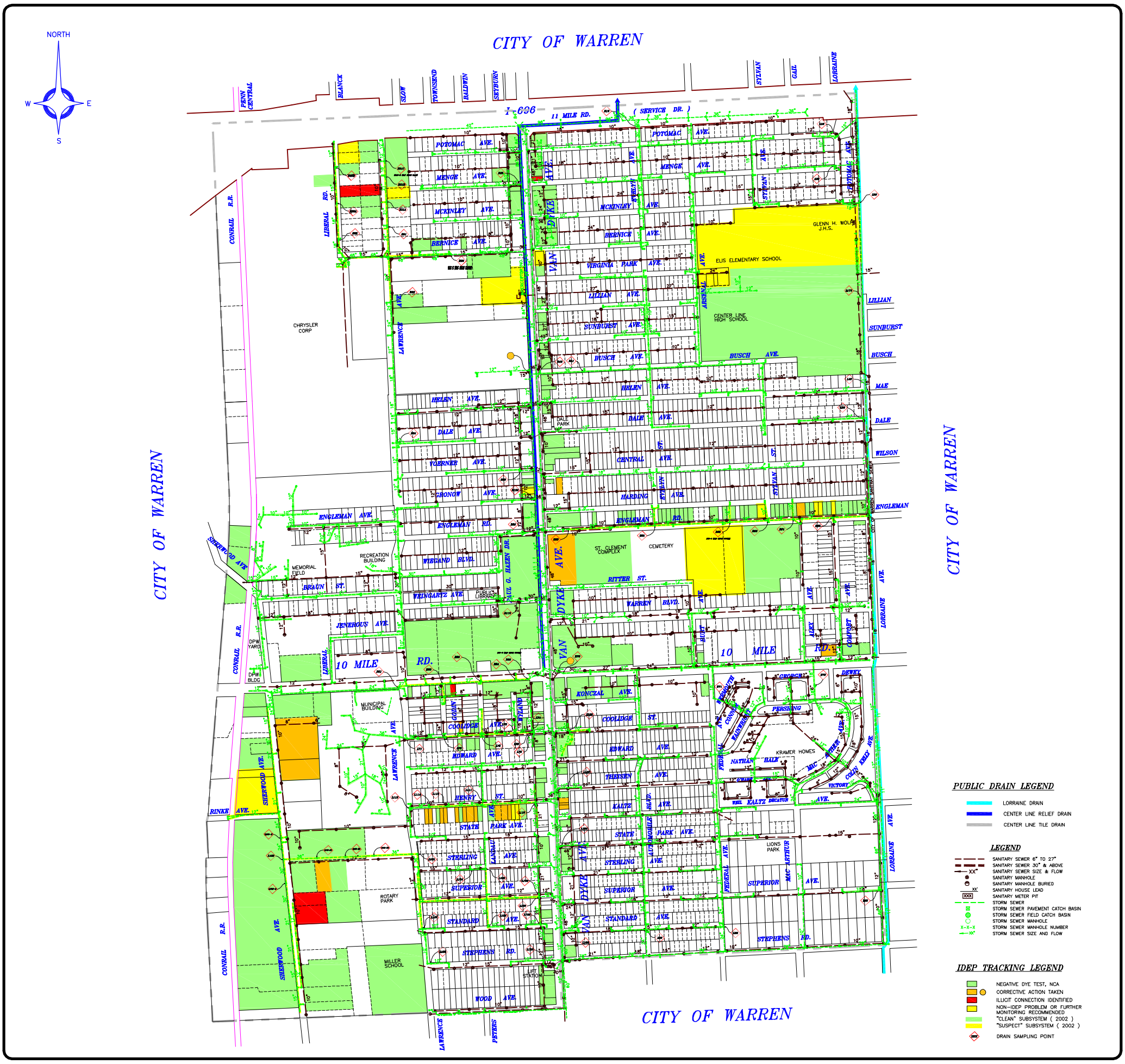

REVISIONS / UPDATES	
DATE	REMARKS
OCTOBER 14, 2002	UPDATED
OCTOBER 16, 2003	UPDATED
FEBRUARY 7, 2006	UPDATED

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Civil Engineers • Surveyors • Architects
51301 Schoenherr Road, Shelby Township, Michigan 48315
Phone 586-726-1234 Fax 586-726-2560

PLOT DATE: FEBRUARY 7, 2006	DRAWING DATE: JULY 9, 2002
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COUNCIL
ROY J. GILLETTE
MARY F. HAFNER
DAVID W. HANSELMAN
RONALD LAPHAM

City of Center Line

IDEP TRACKING SEWER MAP

STATUS AS OF FEBRUARY 2006

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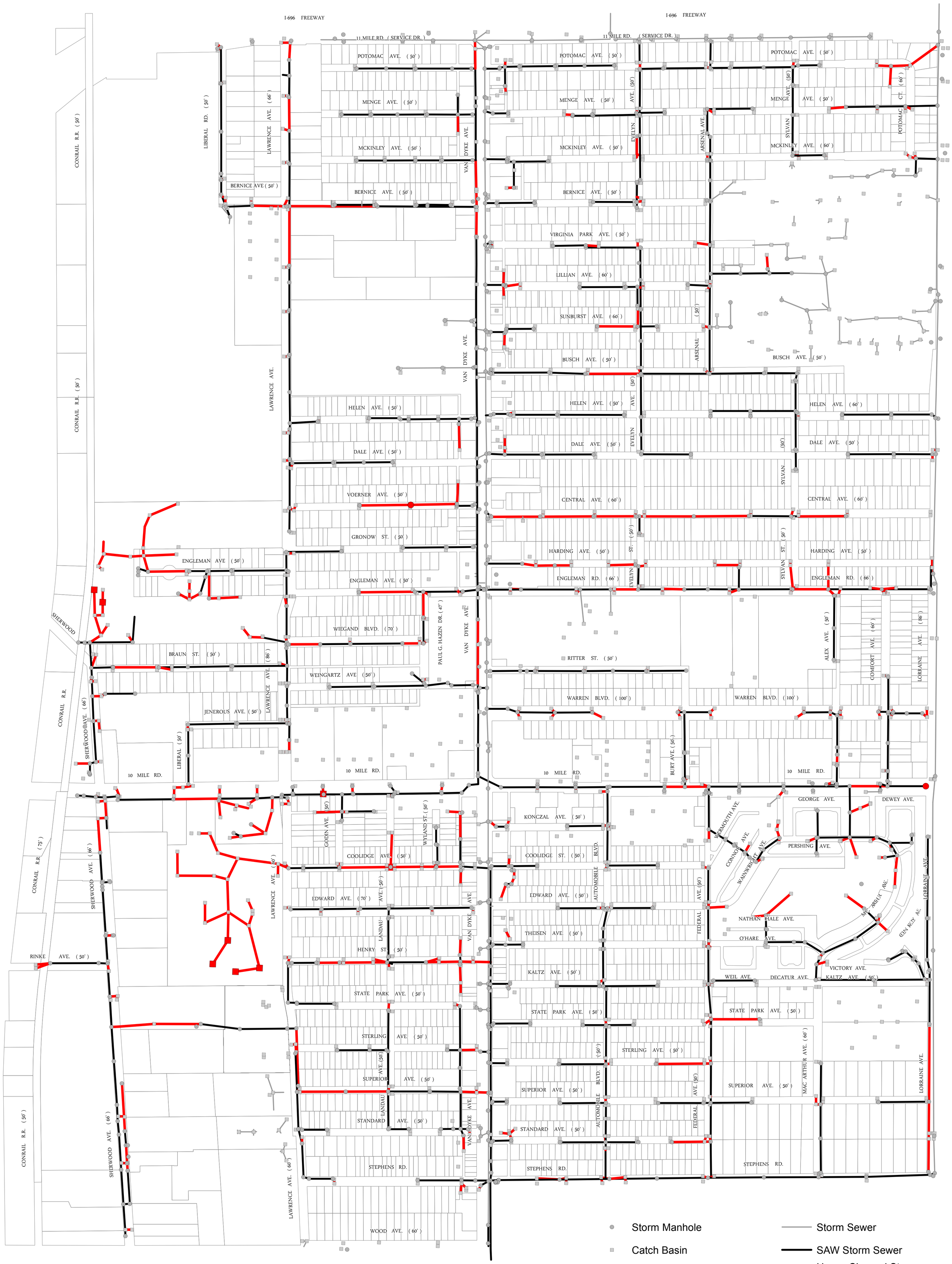

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MS4 System Cleaning

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City of Center Line

Storm Water Management Plan (SWMP)

Appendix B

Public Education Plan (PEP)

May 24, 2019

1. Approval letter of Clinton River Watershed, Anchor Bay and Lake St. Clair Direct Drainage, Collaborative PEP (dated February 19, 2019, 3 pages)
2. Clinton River Watershed, and Lake St. Clair Direct Drainage, Collaborative PEP (dated February 4, 2019, 7 pages)
3. VIII Appendix A - Clinton River Red Run Subwatershed (R2W) Activities Detail Table 1 (7 pages)
4. IX. Appendix B – Community Specific Actions Tracking Spreadsheet (2 pages)
5. X. Appendix C – Letters of Commitment for Services and Programs (3 pages)

STATE OF MICHIGAN
DEPARTMENT OF ENVIRONMENTAL QUALITY
SOUTHEAST MICHIGAN DISTRICT OFFICE

GRETCHEN WHITMER
GOVERNOR

LIESL EICHLER CLARK
DIRECTOR

February 19, 2019

Ms. Kathleen Sexton
Program Manager
Clinton River Watershed Council
1115 W. Avon Road
Rochester Hills, Michigan 48309

Dear Ms. Sexton:

SUBJECT: Clinton River Watershed, Anchor Bay and Lake St. Clair Direct Drainage Collaborative Public Education Plan (PEP) Review

On January 31, 2019, the Department of Environmental Quality (DEQ), Water Resources Division (WRD), Southeast Michigan District Office, received the final version of the updated Clinton River Watershed, Anchor Bay and Lake St. Clair Direct Drainage Public Education Plan (PEP). This collaborative PEP was submitted on behalf of and covers the MS4 permittees listed on Attachment I and their nested MS4s.

The DEQ staff reviewed the collaborative PEP for compliance with Section VII (Public Education Program) requirements of the new MS4 Individual MS4 Permit application. Municipal staff, county agencies, and the CRWC participated in the development and revisions of this PEP based on the new permit requirements.

Based on our review, the revised collaborative PEP is approved and meets the requirements of the new MS4 permit.

PEP activities facilitated by CRWC, Macomb and Oakland Counties, will be reported biennially by CRWC on behalf of the permit holders listed in the PEP and their nested MS4s. In addition, the Phase I permittees (Warren and Sterling Heights), will continue to submit progress reports as required by their NPDES Individual MS4 permits. The PEP includes a Community Specific Activities Section listing the specific PEP activities that are to be implemented by the individual permittees and reported on individually in each permittee's progress reports.

Thank you for your work in helping to develop and coordinate this collaborative PEP. We look forward to working with the partners and stakeholders involved as the implementation of the PEP continues.

If you have any further questions, please contact Martin Hendges at 586-342-0939; or at hendgesm@michigan.gov.

Sincerely,

Melinda Steffler
District Supervisor
Southeast Michigan District Office
Water Resources Division

Attachment

cc: Mr. Martin Hendges, DEQ-WRD
Ms. Lishba Varughese, DEQ-WRD
MS4 Permittees (Attachment I)

Attachment I

MS4 Permittees participating in the Collaborative PEP

Avondale School District
Charter Township of Clinton
Charter Township Orion
Charter Township of Shelby
City of Center Line
City of Eastpointe
City of Grosse Pointe
City of Grosse Pointe Park
City of Fraser
City of Hazel Park
City of Mount Clemens
City of Orchard Lake Village
City of Rochester
City of Roseville
City of Sterling Heights
City of the Village of Clarkston
City of Utica
Independence Township
Macomb County
Oakland University
Rochester Community Schools
Village of New Haven
Village of Romeo
Charter Township of Chesterfield
Charter Township of Harrison
Charter Township of Oxford
Charter Township of Washington
City of Keego Harbor
City of Fraser
City of Grosse Pointe Farms
City of Grosse Pointe Shores
City of Harper Woods
City of Madison Heights
City of New Baltimore
City of Pontiac
City of Rochester Hills
City of St. Clair Shores
City of Sylvan Lake
City of Troy
City of Warren
Macomb Township
Oakland County
Oxford Area Community Schools
Village of Lake Orion
Village of Oxford

Clinton River Watershed
Anchor Bay
Lake St. Clair Direct Drainage

Collaborative Public Education Plan

Approved:
February 4, 2019

Submitted by the Clinton River Watershed Council on behalf of
Macomb County, Oakland County
and the MS4 permit holders that participate in the
Clinton River Watershed Council's Stormwater Education Program

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I. INTRODUCTION

This watershed wide Public Education Plan (PEP) was developed to inform the public within the Clinton River Watershed about their role in protecting water quality and preventing stormwater pollution. This plan was created by the municipalities and other partners in the Clinton River Watershed with the input of stakeholders and professionals in the environmental education field. This plan outlines the public education goals and messages that must be communicated under the requirements of the National Pollutant Discharge Elimination System (NPDES) Phase I and Phase II regulations. The PEP also describes the existing and future efforts the communities and other partners will undertake to achieve these education goals, and how these efforts will be evaluated.

II. PARTNERS & STAKEHOLDERS

This watershed wide PEP is submitted on behalf of Macomb County, Oakland County and the MS4 permit holders that participate in the Stormwater Education Program facilitated by the Clinton River Watershed Council (CRWC). Municipal staff, county agencies, and CRWC participated in the development of the PEP. The CRWC Stormwater Education program was developed to assist communities that must comply with the NPDES Phase I or Phase II stormwater discharge regulations. Activities facilitated by CRWC, Macomb and Oakland Counties, and the MSU Extension Office will be reported on behalf of the following permit holders and their nested MS4's.

Avondale School District
Charter Township of Chesterfield
Charter Township of Clinton
Charter Township of Harrison
Charter Township Orion
Charter Township of Oxford
Charter Township of Shelby
Charter Township of Washington
City of Center Line
City of Keego Harbor
City of Eastpointe
City of Fraser
City of Grosse Pointe
City of Grosse Pointe Farms
City of Grosse Pointe Park
City of Grosse Pointe Shores
City of Fraser
City of Harper Woods
City of Hazel Park
City of Madison Heights
City of Mount Clemens
City of New Baltimore
City of Orchard Lake Village
City of Pontiac
City of Rochester
City of Rochester Hills
City of Roseville
City of St. Clair Shores
City of Sterling Heights
City of Sylvan Lake
City of the Village of Clarkston
City of Troy
City of Utica
City of Warren
Independence Township
Macomb Township
Macomb County
Oakland County
Oakland University
Oxford Area Community Schools
Rochester Community Schools
Village of Lake Orion
Village of New Haven
Village of Oxford
Village of Romeo

Clinton River watershed communities, subwatershed groups, and partners agreed that approaching stormwater education on a watershed, cross-jurisdictional basis is both cost-effective and environmentally sound. The watershed approach allows the partners to share information and resources to address stormwater concerns at their source. Similarly, developing and implementing a public education program on a watershed basis provides a consistent and effective mechanism for protecting water resources across the region, while leveraging financial resources in each community.

During preparation of this PEP, various municipal staff, environmental organizations, county agencies, and the MSU Extension offices were contacted.

The following information was compiled to identify and organize existing stormwater education materials and programs:

- Existing materials or programs used to educate the public about watersheds and water quality protection (e.g. brochures, videos, displays, school programs, etc.).
- Existing audiences to target for watershed education (e.g. homeowners associations, lake associations, churches, civic groups, business associations, etc.).
- Existing communication methods that could be used to disseminate watershed education (e.g. cable access channel, email, website, newsletter, water bills, etc.).

III. CLINTON RIVER WATERSHED COUNCIL'S STORMWATER EDUCATION PROGRAM

The CRWC is a nonprofit organization dedicated to protecting, enhancing, and celebrating the Clinton River, its watershed, and Lake St. Clair. For over 45 years, the CRWC has worked collaboratively with local governments, businesses, individuals, and other community groups to address water quality and land use issues in the watershed. Stormwater runoff is the leading source of pollution in the Clinton River today, thus CRWC's efforts are focused primarily on decreasing the amount of stormwater and stormwater pollution reaching our streams, rivers, and lakes. CRWC works to achieve its mission by providing education and stewardship programs to the more than 1.5 million people, 63 communities, and 4 counties in the Clinton River watershed.

Upon the request of a number of communities, CRWC developed the Stormwater Education Program to assist its members in meeting their Phase I or Phase II public education requirements. The components of the Stormwater Education Program are outlined in this PEP, along with materials and programs offered by the counties, CRWC, and MSU extension. These materials and programs will be supported and promoted by the MS4 permittees named in this PEP. In subscribing to the Stormwater Education Program, each participating entity has entered into contract with the watershed council. CRWC has agreed to provide the programs outlined in this plan.

As outlined in this PEP, CRWC's program includes the following major components:

- Education of the public and recruitment of volunteers in each subwatershed through a variety of outreach methods (presentations, workshops, websites, cable TV, print media, etc.).
- Regular volunteer training sessions and establishment of water quality monitoring sites throughout each subwatershed.
- Quarterly stormwater management forums for municipal staff, City Council members, planners, engineers, consultants, MDEQ MS4 permit staff, and other watershed stakeholders to share information and discuss topics related to stormwater management, planning, and infrastructure development.
- Coordination of other on-going education and stewardship efforts, including River Day, Weekly Clean, Clinton Clean-Up, paddling events, water festivals, Adopt-A-Stream citizen science program, the Stream Leaders student river monitoring program, and the RiverSafe LakeSafe program.

- Engage and collaborate with municipalities to promote and facilitate CRWC's WaterTowns™ place making initiative focused on connecting communities to their waterways through education, green stormwater infrastructure, history, art, and ecology.
- Development and distribution of supporting print and web-based materials.

IV. GOALS & OBJECTIVES

The goal of this PEP is to promote, publicize, and facilitate watershed education for the purpose of encouraging the public to reduce the discharge of pollutants in stormwater to the maximum extent practicable. Pollution prevention shall be encouraged.

"Public" is defined to include all persons who potentially could affect the authorized stormwater discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, construction contractors, and developers.

This PEP is designed to ensure that the targeted audiences ("public") are reached with the appropriate messages for the following nine topics as required in the 2003 NPDES Phase II stormwater permit:

1. Responsibility and stewardship in their watershed.

2. The connection of MS4 catch basins, storm drains, and ditches to area waterways, and the potential impacts these could have on the surface waters of the state.

3. Public reporting of illicit discharges or improper disposal of materials in MS4s.

4. The effects and need to minimize the amount of residential or noncommercial wastes discharged into MS4s, including:

    i. Preferred cleaning materials and procedures for car, pavement, and power washing.
    ii. Acceptable application and disposal of pesticides, herbicides, and fertilizers.
    iii. Proper disposal practices for grass clippings, leaf litter, and animal wastes that get flushed into MS4s and the surface waters of the state.

5. The availability, location, and requirements of facilities for disposal or drop-off of household hazardous wastes, travel trailer sanitary wastes, chemicals, yard wastes, and motor vehicle fluids.

6. For property owners with septic systems, the proper septic system care and maintenance, and how to recognize system failure.

7. The benefits of using native vegetation as well as other landscape practices that enhance water quality such as rain gardens and rain barrels. .

8. For permittees with riparian land owners, methods for managing riparian lands to protect water quality.

9. Additional pollutants unique to commercial, industrial, and institutional entities as the need is identified.

10. Green stormwater infrastructure development and benefits.

All PEP participating permittees were required to apply for a new MS4 permit in their respective permit cycle years. The following key messages will be covered within the Clinton River Watershed and Lake St. Clair Direct Drainage Collaborative Public Education Plan. This Collaborative PEP was developed and will be implemented to continue meeting the PEP requirements of the 2003 MS4 permit as well as the new MS4 permit going forward.

A. Promote public responsibility and stewardship in the applicant's watershed(s).

B. Inform and educate the public about the connection of the MS4 to area waterbodies and the potential impacts discharges could have on surface waters of the state.

C. Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4.

D. Promote preferred cleaning materials and procedures for car, pavement, and power washing.

E. Inform and educate the public on proper application and disposal of pesticides, herbicides, and fertilizers.

F. Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter into the MS4.

G. Identify and promote the availability, location, and requirements of facilities for collection or disposal of household hazardous wastes, travel trailer sanitary wastes, chemicals, and motor vehicle fluids.

H. Inform and educate the public on proper septic system care and maintenance, and how to recognize system failure.

I. Educate the public on and promote the benefits of green stormwater infrastructure and Low Impact Development.

J. Promote methods for managing riparian lands to protect water quality.

K. Identify and educate commercial, industrial, and institutional entities likely to contribute pollutants to stormwater runoff.

V. REQUIRED ELEMENTS –EDUCATION ACTIVITIES

Appendix A details the activities and methods that the **Clinton River Watershed Council, Macomb County, Oakland County, and MSU extension will perform on behalf of the participating communities.** The matrix breaks out the activities according to the elements and key messages that they address and describes the target audiences, delivery mechanisms, timeline, responsible parties, and evaluation methods for each activity. An overall evaluation plan is also included in Section VI.

VI. EVALUATION PLAN

A variety of mechanisms will be employed. Some will quantify the usage of materials (e.g. number of materials distributed, website hits) and participation in events (e.g. number of attendees at a presentation or workshop, number of participants at an event). These mechanisms can be useful in determining whether the education effort is reaching the audience; however it is difficult to evaluate behavior change resulting from the education activity using these purely quantitative methods.

The CRWC will use an online survey tool to measure post contact behavioral changes. For example; email addresses will be collected from all CRWC facilitated event attendees, 60-90 days following the event an email with a link to the online survey will be sent asking the participant some questions about their general knowledge and behavior changes. While the surveys are not scientifically significant the results of the survey can help mold the Public Education Efforts throughout the Clinton.

Through CRWC's Adopt-A-Stream monitoring program, it is possible to evaluate long-term changes in water quality. The results are compiled in an annual data summary, which allows a simple mechanism for measuring improvements or declines in water quality across the various subwatersheds. This data is managed in a document that records water quality monitoring results for up to the past five years. Improvements in water quality cannot be attributed solely to a successful public education effort, but indicate the overall effectiveness of the stormwater management efforts in the community, subwatershed, and watershed-wide.

VII. REPORTING

The Clinton River Watershed Council will provide a Biennial Progress Report on this Public Education Plan to the Michigan Department of Environmental Quality. This Biennial Report of the watershed wide collaborative PEP is submitted by the CRWC on behalf of Macomb County, Oakland County and the MS4 permit holders that participate in the Stormwater Education Program facilitated by CRWC. Activities facilitated by CRWC, Macomb and Oakland Counties, and the MSU Extension Office will be reported on behalf of the permit holders and their nested MS4s.

VIII. APPENDIX A: ACTVITIES DETAIL TABLE 1

IX. APPENDIX B: COMMUNITY SPECIFIC ACTIONS TRACKING SPREADSHEET

X. APPENDIX C: LETTERS OF COMMITMENT FOR SERVICES AND PROGRAMS

1. Macomb County Public Works Office
2. Oakland County Water Resources Commissioner's Office
3. MSU Extension

Red Run Drain (R2W) - Updated 2019

PEP TOPIC	BMP IDENTIFIER	BMP DESCRIPTOR	PARTNER COLLABORATION	Target Audience	PEP Element A - Personal Watershed Stewardship	PEP Element B - Ultimate Storm Water Discharge Locations and Potential Impacts	PEP Element C - Public Reporting of Illicit Discharges	PEP Element D - Car, Pavement PowerWashing	PEP Element E- Pesticides, Herbicides, Fertilizer Education	PEP Element F-Grass Clippings, Leaf Litter, Animal Waste Disposal	PEP Element G - Waste Management Assistance	PEP Element H- Septic System Maintenenance	PEP Element I - Benefits of Green Infrastructure LID	PEP Element J - Mgt. of Riparian Lands	PEP Element K - Commercial, Industrial, Institutional Education	FREQUENCY	RESPONSIBLE PARTY	MEASURABLE GOAL
A,B,C,J	Adopt-A-Stream Training Workshops	Adopt A Stream training includes one 3-hour workshop on watersheds, stormwater pollution, watershed friendly practices, and training in volunteer monitoring procedures including macroinvertebrate collection and physical assessment. (Minimum of one 3 hr workshop per subwatershed) Bug Identification Workshops are also held to ensure that each team has at least one bug certified member.	YES	Citizens including the general public and county and municipal employees	x	x	x							x		Continuous	CRWC	Minimum 6 AAS trainings annually (1 per subwatershed). Minimum 2 Bug ID trainings annually.
A,B,C,J	Adopt-A-Stream Volunteer Water Quality Monitoring Program	Coordination of volunteer monitoring teams at pre-selected sites.	YES	Citizens including the general public and county and municipal employees	x	x	x							x		Biannually	CRWC	Monitor a minimum of 35 locations, with a minimum of 100 volunteers on the first Saturday in May and the first Saturday in October.
A-K	Subwatershed Website	Hosted by CRWC website; features subwatershed map, photos, description, events and links to education resources.	YES	Citizens including the general public and county and municipal employees	x	x	x	x	x	x	x	x	x	x	x	Continuous	CRWC	Continue to maintain page and update information and verify participating communites links to this website. Website admin (CRWC) can view number of website hits and will submit in biennial report.
A-C,E,F,I,J	Stream Leaders Student River Monitoring Program	The mission of the Stream Leaders program is to raise young people's awareness of the importance of water quality; and to help cultivate a connection to a Great Lakes stewardship identity. This is accomplished through a multidisciplinary, place-based initiative that provides students with an educational experience in water quality monitoring, data interpretation, and citizen action. Students and teachers perform	YES	K-12th grade students, teachers and chaperones	x	x	x		x	x			x	x		Program is continuous; Actual monitoring events in April/May and October.	CRWC	Retain participation of a minimum of 3,100 students and 20 schools per year, weather permitting.
A, D-F, H-J	RiverSafe LakeSafe	Educational outreach survey tool offering homeowners the opportunity to become certified "RiverSafe LakeSafe" by CRWC if they commit to the series of household water quality BMPs at home that reduce stormwater pollution and protect local fresh surface waters. Encourage MS4 permit communities to become certified and promote through City Council, beautification boards, planning committees, or other local committees.	YES	Home/Property owners	x			x	x	x		x	x	x		Continuous	CRWC	add a minimum of 10 new certifications a year
I-K	WaterTowns	their waterways through education, green infrastructure, history, art and ecology. Municipalities are equipped with complete shovel ready green infrastructure project designs custom for their community and are given the opportunity to implement a GI project, providing an educational	YES	Municipal Employees, property developers, general public									x	x	x	Continuous	CRWC	bring on a minimum of 2 new communities a year to the WaterTowns program
I-K	Stormwater Education: Industrial and Commercial Facilities	Provide educational materials and BMP fact sheets to industrial and commercial facilities. Target 2 industrial/commercial sectors per year. Distribute BMP information via email that is created specifically for each sector.	YES	Employees and property owners at industrial and commercial facilities. Property developers, planners, engineers.	x										x	Continuous	Macomb; Oakland; CRWC; MS4 Permittes	Target 2 sectors per year. Distribute BMP fact sheets through annual email blast to designated contact at each facility. Track distribution via list of businesses and emails sent.
I-K	Stormwater Education: Industrial and Commercial Facilities	Attend Regional Chamber of Commerce Networking events to build relationships with business owners and share information related to stormwater pollution prevention for business/industry.	YES	Employees and property owners at industrial and commercial facilities. Property developers, planners, engineers.	x										x		CRWC	Attend a minimun of 2 events annually.
A-K	Social Media Outreach	Use social media platforms (Facebook, Twitter, Instagram) to collaborate among partners for cross promotion of events, fundraisers, news, education, and community announcements.	YES	Citizens including the general public and county and municipal employees	x	x	x	x	x	x	x	x	x	x	x	Continuous	CRWC	Track total monthly response and interactions such as likes, comments, and shares on Facebook, likes, responses, and retweets on Twitter, and likes on Instagram.
	Macomb County Specific Activities																	
A-K	Public Works Presentations	Presentations are offered to school and adult groups. These presentations educate citizens on pollution prevention in our waterways in order to improve the quality of life and promote economic prosperity with clean water.	YES	General Public in Macomb County	x	x	x	x	x	x	x	x	x	x	x	Annually	Macomb	30 presentations per year

Red Run Drain (R2W) - Updated 2019

PEP TOPIC	BMP IDENTIFIER	BMP DESCRIPTOR	PARTNER COLLABORATION	Target Audience	PEP Element A - Personal Watershed Stewardship	PEP Element B - Ultimate Storm Water Discharge Locations and Potential Impacts	PEP Element C - Public Reporting of Illicit Discharges	PEP Element D - Car, Pavement PowerWashing	PEP Element E- Pesticides, Herbicides, Fertilizer Education	PEP Element F-Grass Clippings, Leaf Litter, Animal Waste Disposal	PEP Element G - Waste Management Assistance	PEP Element H- Septic System Maintenance	PEP Element I - Benefits of Green Infrastructure LID	PEP Element J - Mgt. of Riparian Lands	PEP Element K - Commercial, Industrial, Institutional Education	FREQUENCY	RESPONSIBLE PARTY	MEASURABLE GOAL
A-D,K	Clean Boating	Inform and promote clean boating practices with including pollution prevention, spill notification and invasive species control	YES	General Public	x	x	x	x							x	Seasonally	Macomb	Meet with local boating association once a year and hand out 50 flyers promoting current pollution prevention initiatives.
A,K	MSU Extension Understanding Groundwater	This presentation targets 4th through 6th graders. Using a groundwater model and hands on activities, students review basic water knowledge, learn what groundwater is, the surface/groundwater connection and the importance of protecting and conserving groundwater resources.	YES	Elementary students and educators	x										x	Annually	Macomb	Participation is tracked, based on school requests for the program and availability of staff
A-D, G,H,K	MSU Extension Water Conservation Program	Designed for 1st through 3rd graders. The children explore water conservation topics such as where water comes from, how to use water wisely, and how to protect and conserve this precious resource.	YES	Elementary students and educators	x	x	x	x			x	x			x	Annually	Macomb	100 classroom presentations per year
A,E,F,I,K	MSU Extension Master Gardener Program	The Michigan State University Extension Master Gardener Program is an adult horticulture education and volunteer leader training program. Volunteers are committed to improving the quality of life in Michigan through horticulture-based volunteerism and beautifying communities throughout the state.	YES	Citizens	x				x	x			x		x	Annually	Macomb	50 active volunteers providing 2,000 hours of volunteer service.
A,E,F,I,K	MSU Extension Master Composter Program	The Master Composter course instructs residents about yard waste composting and reduction. This shows the importance of improving your yard at little cost, with little odor or attracting critters, and teaches how to reduce waste that must be disposed. This program gives correct knowledge that can be shared through volunteer activities.	YES	General Public	x				x	x			x		x	Annually	Macomb	5 active volunteers providing 100 hours of volunteer service.
A-C, E,F,J,K	MSU Extension Sea Grant Summer Discovery Cruises	Summer Discovery Cruises offer anyone intersted in exploring Lake Erie, the Detroit River and Lake St. Clair the opportunity to get out on the water for an education experience.	YES	General Public	x	x	x		x	x				x	x	Seasonally	Macomb	250 participants per year
A,E,F,K	MSU Extension 4-H Environmental and Outdoor Education	Programs focus on teaching environmental responsibility and stewardship. This 4-H program area provides educational opportunities for youth to enjoy the outdoors and learn about the interconnection of people and nature.	YES	Youth	x				x	x					x	Annually	Macomb	1,000 youth per year mentored and educated by 100 adult and teen volunteers to deliver their programs.
A-K	MSU Extension Public Education Classes	Homeowner classes on environmentally safe maintenance	YES	General Public	x	x	x	x	x	x	x	x	x	x	x	Annually	Macomb	25 attendees per year
A-K	Facility Tours	On-site tours of Macomb County facilities are available relating to environmental impacts to the Clinton River and Lake St. Clair. Tours focus on what the county is doing to improve our water resources and to educate the public on how they can help.	YES	General Public	x	x	x	x	x	x	x	x	x	x	x	Annually	Macomb	Engage 20 participants per year.

Red Run Drain (R2W) - Updated 2019

PEP TOPIC	BMP IDENTIFIER	BMP DESCRIPTOR	PARTNER COLLABORATION	Target Audience	PEP Element A - Personal Watershed Stewardship	PEP Element B - Ultimate Storm Water Discharge Locations and Potential Impacts	PEP Element C - Public Reporting of Illicit Discharges	PEP Element D - Car, Pavement PowerWashing	PEP Element E- Pesticides, Herbicides, Fertilizer Education	PEP Element F-Grass Clippings, Leaf Litter, Animal Waste Disposal	PEP Element G - Waste Management Assistance	PEP Element H- Septic System Maintenenance	PEP Element I - Benefits of Green Infrastructure LID	PEP Element J - Mgt. of Riparian Lands	PEP Element K - Commercial, Industrial, Institutional Education	FREQUENCY	RESPONSIBLE PARTY	MEASURABLE GOAL
A,B,C,G	Household Hazardous Waste Collection	The Macomb County Health Department sponsors hazardous waste collection drop-off sites for proper disposal. This includes fluorescent bulbs, used oil & oil filters, mercury thermometers, PCBs, etc.	YES	Macomb County Residents	x	x	x				x					Annually	Macomb	Host six events per year and a collection goal of 100,000 pounds of waste from participating residents
A,G	Medication Disposal	Low concentrations of prescription drugs, including opiates, and over the counter medications have been detected in the drinking water supplies of 24 major metropolitan areas throughout the country, including Detroit. Contributing to the problem is the disposal dilemma faced by residents who want to safely dispose of unwanted medications without flushing them down the drain.The Macomb County Health Department is partnering with local pharmacies to accept unwanted and expired	YES	General Public	x						x					Annually	Macomb	Collect 1,000 pounds of unwanted medication annually. Data is collected from sheriff's department.
A,I-K	The Blue Economy Initiative	Macomb County's Blue Economy Initiative is designed to protect and enhance Macomb County's assests, Lake St. Clair and the Clinton River Watershed. Its objectives are to increase public access and cultivate investment while maintaining high standards for environmental stewardship.	YES	General Public	x								x	x	x	Annually	Macomb	Annually host a lake event.
	Lake St. Clair Initiative Circle the Lake Tour	Macomb County Planning and Economic Development created this public/private, non-profit association to increase the awareness, protect, and develop the rich and diverse assets on and around this fresh water community.	YES	General Public	x											Annually	Macomb	Distribute 500 maps through municipalities and tourism events.
A,J	Clinton River Blue Way Water Trail	Macomb Count created a Blue Way Water Trail to increase awareness of the natural assets the county possesses and create opportunities to publicize and increase access to the Clinton River.	YES	General Public	x									x		Annually	Macomb	Distribute 200 water trail maps through the CRWC.
A,E,J	Phragmites Invasive Removal	The intent of the project is to protect coastal marshes (wetlands) within the St. Clair watershed through the control of common reed, or phragmites. Treatment includes aerial and ground application of herbicide, followed by either prescribed burning or mowing.	YES	General Public	x				x					x		Seasonally	Macomb	Attend 4 CISMA meetings per year.
A,B,J	Spill Awareness	Macomb County will promote a citizens awareness program for spill response and how to notify proper authorities for clean up if necessary.	YES	Homeowners, visitors, and business owners within Macomb	x	x								x		Annually	Macomb	Attend 1 Emergency Response meeting a year to update and report procedures.
A-K	Bulletin Boards/ Displays	Bulletin boards in the designated county buildings on clean water topics. Other related information is posted and/or materials are placed for public/county employees to take. Display booths at county events and other events as requested.	YES	General public, Macomb County employees	x	x	x	x	x	x	x	x	x	x		Quarterly	Macomb	flyers and topics to be rotated at least 4 times per year. Materials are counted before and after each event
A-C, G, I, J	Macomb County Social Media Sites	All the related Macomb County departments keep the Macomb County communities informed on the many projects, services provided, and highlights some of the ongoing projects and services going on in the county through various forms of social media. These resources also provide updates about events and education the citizens can participate in around the county. The main county website is: http://www.macombgov.org/.	YES	General public, Macomb County employees	x	x	x				x		x	x		Updated on a regular basis	Macomb	Provide working links to websites and pages. Track hits on websites and social media pages
A-K	Publications	Publicize environmental stewardship, pollution prevention, best mangement practices and other relevant environmental activities to Macomb County staff, the general public and business/industry	YES	General public, Macomb County employees	x	x	x	x	x	x	x	x	x	x	x	Annually	Macomb	distribute at least 150 publications through direct mailing or email each year
A-K	Riparian Information	Make available riparian landowner educational materials at events, meetings, and through mailings.	YES	General Public, Riparian Landowners	x	x	x	x	x	x	x	x	x	x	x	Annually	Macomb	Educate at least 12 riparian residents a year through inquiries.
	Macomb County NON-REQUIRED Activities																	

Red Run Drain (R2W) - Updated 2019

PEP TOPIC	BMP IDENTIFIER	BMP DESCRIPTOR	PARTNER COLLABORATION	Target Audience	PEP Element A - Personal Watershed Stewardship	PEP Element B - Ultimate Storm Water Discharge Locations and Potential Impacts	PEP Element C - Public Reporting of Illicit Discharges	PEP Element D - Car, Pavement PowerWashing	PEP Element E- Pesticides, Herbicides, Fertilizer Education	PEP Element F-Grass Clippings, Leaf Litter, Animal Waste Disposal	PEP Element G - Waste Management Assistance	PEP Element H- Septic System Maintenance	PEP Element I - Benefits of Green Infrastructure LID	PEP Element J - Mgt. of Riparian Lands	PEP Element K - Commercial, Industrial, Institutional Education	FREQUENCY	RESPONSIBLE PARTY	MEASURABLE GOAL
A,B,G,K	Board of Commissioners Earth Day Contest	Macomb County will promote and sponsor an Earth Day contest for 4th & 5th grade students in the county.	YES	Elementary students	x	x					x				x	Annually	Macomb	Have at least 10 participants per year.
A,B,E,F,I<K	Green Macomb	The Macomb County Department of Planning & Economic Development is developing a new initiative to support green infrastructure efforts that strengthen the economic vitality, quality of life, and environmental wellbeing for those visiting, living, and working in Macomb County.	YES	General Public	x	x			x	x			x		x	Annually	Macomb	Plant 50 trees a year and attend one event per year.
A,J	HEART Freshwater Center	The HEART Freshwater Center is a unique alliance of agencies working together to study the Huron to Erie Corridor through research, education and training. The purpose of this research is to improve the ecosystems of these water bodies and the quality of life for the people who use them.	YES	General Public	x									x		Annually	Macomb	Work with lab two times a year on water quality event/testing.
	Oakland County Specific Activities																	
A-C, G, I-K	Regional Stormwater Summit	This annual event, which debuted in 2013, features presentations on stormwater and watershed initiatives in the southeast Michigan and the Great Lakes region that are relevant in helping communities work together and gain insight into addressing the region's stormwater and watershed management challenges.	YES	Citizens including the general public and county and municipal employees	x	x	x				x		x	x	x	Annually in the Fall (September/October)	Oakland	Maintain a minimum 100 participants annually from southeast MI
A-K	Bulletin Boards	Bulletin boards in the WRC or public Works Building main lobby and framed posters in the vestibule of the WRC Water and Sewer Billing Office in Waterford are posted with information developed by the Southeast Michigan Partners for Clean Water on the "Seven Simple Steps to Clean Water" topics. Other related information is posted and/or materials are placed on the front desk of the Public Works Building main lobby for the public/county employees to take.	YES	General public, CVTs, county employees within Oakland County	x	x	x	x	x	x	x	x	x	x		Monthly	Oakland	Topics posted are tracked in an excel spreadsheet available upon request. Topics posted will be reported annually
A-C E-G, I	Dirt Doctors Program	The Dirt Doctors Program is an interactive program facilitated by WRC staff geared towards 4th and 5th grade students and teaches youth about how individual actions affect our waterways. The program focuses on the importance of soil erosion prevention and watershed stewardship.	YES	Oakland County 4th-12th grade students, teachers and chaperones	x	x	x		x	x	x		x			Annually	Oakland	Minimum of 25 programs annually
A-C, H	Drain Detectives Program	The Drain Detectives Program is an interactive program facilitated by WRC staff geared towards 4th through 12th grade students. It teaches students how pollution can get into our waterways, what to look for, how to detect it and how to trace the source of the pollution. Students learn how they can help prevent pollution and how to report pollution incidents through Oakland County's 24-Hour Pollution Hotline. Students also learn how water and pollution travel through the watershed.	YES	Oakland County 4th-12th grade students, teachers and chaperones	x	x	x					x				Annually	Oakland	Minimum of 5 programs over the permit cycle
A-J	Enviroscape Watershed Model Program	The Enviroscape watershed model teaches students about watersheds and how individual actions affect our waterways, as well as how pollution moves throughout a watershed. Students are taught how to prevent pollution through everyday actions. The model is programming is facilitated by WRC staff The Enviroscape is also made available to the public to borrow for presentations.	YES	General public, Oakland County students	x	x	x	x	x	x	x	x	x	x		Annually	Oakland	Minimum of 10 programs annually
A-C, G, I, J	E-newsletter Articles	WRC features an electronic newsletter to the public, CVTs, elected officials and county employees on a quarterly basis (the E-newsletter has taken the place of the WRC Watermark newsletter). This newsletter keeps Oakland County communities informed on the many projects and services provided by the WRC and highlights some of the WRC`s ongoing projects and services. It also provides updates about the evolving role of the WRC office.	YES	General public, CVTs, elected officials, and county employees in Oakland County	x	x	x				x		x	x		Published quarterly	Oakland	Minimum of 4 newsletters annually
A-K	Household Hazardous Waste Information	Continue to publicize information on the NO HAZ, Resource Recovery and Recycling Authority of Southwest Oakland County (RRRASOC) and Southeastern Oakland County Resource Recovery Authority (SOCRRA) programs to citizens and employees of Oakland County on WRMD's Web site (www.oakgov.com/waste/nohaz). NO HAZ, RRRASOC and SOCRRA provide safe disposal of household hazardous waste to Oakland County municipalities to the maximum extent practicable (as	YES	Residents	x						x					Annually	Oakland	Maintain working links to NO HAZ sites and track number of website hits annually Hold a minimum of four collection events per year Collect and properly dispose of a minimum of
A-K	Kids' Clean Water Calendar Contest	The Kids' Clean Water Calendar contest is open to all 4th and 5th grade students in all schools within Oakland County. Themes for drawing entries surround the Seven Simple Steps to Clean Water campaign topics developed by SEMCOG. The contest promotes the students to learn about watershed stewardship and how our daily actions impact our waterways.	YES	General public, Oakland County 4th and 5th grade students	x	x	x	x	x	x	x	x	x	x	x	Annually	Oakland	Achieve participation of a minimum of 600 students per year Distribute a minimum of 5,000 calendars per year throughout Oakland County

Red Run Drain (R2W) - Updated 2019

PEP TOPIC	BMP IDENTIFIER	BMP DESCRIPTOR	PARTNER COLLABORATION	Target Audience	PEP Element A - Personal Watershed Stewardship	PEP Element B - Ultimate Storm Water Discharge Locations and Potential Impacts	PEP Element C - Public Reporting of Illicit Discharges	PEP Element D - Car, Pavement PowerWashing	PEP Element E- Pesticides, Herbicides, Fertilizer Education	PEP Element F-Grass Clippings, Leaf Litter, Animal Waste Disposal	PEP Element G - Waste Management Assistance	PEP Element H- Septic System Maintenenance	PEP Element I - Benefits of Green Infrastructure LID	PEP Element J - Mgt. of Riparian Lands	PEP Element K - Commercial, Industrial, Institutional Education	FREQUENCY	RESPONSIBLE PARTY	MEASURABLE GOAL
A, I, J	Natural Resources Education Program	Special programs are offered by Oakland County Parks and Recreation Commission (OCPRC) staff throughout the year which provide opportunities for the community to participate in ongoing stewardship efforts. Programs take place at the Oakland County Parks as well as other locations in Southeast Michigan. Stewardship opportunities are posted on OCPRC's Web site at: www.destinationoakland.com	YES	General public, visitors to the area	x								x	x		Annually	Oakland	Hold a minimum of 10 stewardship events per year with participation from a minimum of 200 individuals per year
A-K	Oakland County Environmental Stewardship and Water Resource Web sites	WRC, Oakland County Planning and Economic Development Services (OCPEDS), Road Commision of Oakland County (RCOC), OCPRC and MSU-Extension Oakland County maintain environmental stewardship and/or water resource information on their Web sites at: www.oakgov.com/es, www.oakgov.com/riparian, https://www.oakgov.com/parks/getinvolved/Pages/Natural-Resource-Management.aspx,	YES	General public, CVTs, county employees	x	x	x	x	x	x	x	x	x	x	x	Annually	Oakland MSUE Oakland	Provide working links to Web sites and track number of website hits annually
A	Oakland Lakefront Magazine Advertisements	Public education messages are placed in the Oakland Lakefront magazine. The messages include pet care, fertilizers, household hazardous waste disposal, earth-friendly landscaping, car care and storm drain awareness. Oakland Lakefront is published monthly and reaches approximately 17,000 homeowners on the waterways of Oakland County.	YES	General public, riparian landowners	x	x	x	x	x	x	x	x	x	x	x	April through September	Oakland	Place six (6) ads per year Reach a minimum of 13,000 lakefront residents per ad per year
A-K	Publicize Environmental-Related Events	Publicize environmental stewardship and other relevant environmental activities to WRC staff and the general public through in-house bulletin boards in WRC lobby. Oakland County also has a Web portal where this information is available at: https://www.oakgov.com/parks/getinvolved/Pages/Natural-Resource-Management.aspx	YES	General Public, visitors to the area, WRC staff	x											Annually	Oakland	Publicize a minimum of 20 natural-resource related events per year Maintain working links to Web sites and track number of website hits annually
G	Recreational Vehicle Waste Dumpsites	Post links and/or locations to recreational vehicle (RV) waste dumpsites in the region on Southeast Michigan Council of Government's (SEMCOG) Ours to ProtectWeb site at: www.semcog.org/OursToProtect_HouseholdWaste.aspx and provide a link to Michigan RV dump sites (www.rvdumps.com/mi.htm) on Oakland County Waste Resource Management Division's Web site at: www.oakgov.com/waste/.	YES	Residents, visitors to the area							x					Annually	Oakland	Provide working links to Web sites and track number of website hits annually to Oakland County's Waste and Recycling Resources page will be tracked annually
A-K	Riparian Information Distribution	Distribute riparian landowner educational material (i.e. Waterfront Wisdom brochure) at events, meetings, and through mailings. Maintain WRC's riparian education Web site (www.oakgov.com/riparian)	YES	General Public, Riparian Landowners	x	x	x	x	x	x	x	x	x	x	x	Annually	Oakland	Maintain working links to Web sites and track number of website hits annually Distribute a minimum of 100 Waterfront Wisdom booklets per year
A, G	Solid Waste Plan	Continue to implement Oakland County's Solid Waste Plan which establishes an enforceable program and processes that when implemented will minimize future adverse impacts upon public health, the environment and the landscape as a result of the generation, handling, processing and disposal of Act 451, Part 115 non-hazardous solid wastes.	YES	Residents	x						x					Annually	Oakland	Provide working link to Web site and track number of website hits annually
A-K	Inland Lake Natural Shoreline/Education Program	The MDEQ and MSU Extension has spearheaded the development of the Michigan Natural Shoreline Partnership (MNSP). Each year, education and outreach is provided to inland lake homeowners and shoreline landscape contractors on the following topics: the importance of natural shoreline landscapes on Michigan's inland lakes, healthy lake ecosystems, understanding the shoreline, shoreline invasive plants, planning a natural shoreline landscape, design ideas for a natural	YES	General Public, Riparian Landowners	x	x	x	x	x	x	x	x	x	x	x	Annually	Oakland	Report annually: -Number of programs held -Number of attendees -Workshop partners Host and participate in at least one program annually in Oakland County
	Operation Medicine Cabinet	The Oakland County Sheriff's Office launched "Operation Medicine Cabinet" in July of 2009 to provide citizens a venue to properly dispose of expired and/or unused prescriptions at several different locations throughout Oakland County. This program helps to reduce the environmental impacts of prescription drugs in our waterways that can have detrimental effects on fish, frogs and other aquatic life.Additional information is available at: www.operationmedicinecabinetmi.com		General public							x						OC Sherriff's office and participating CVT's	Maintain a minimum of 30 participating CVTs in the program. Maintain working links to website and track number of website hits annually Report on the number and location of
	Community Specific Activites	**These items are to be reported by the communities in the SWMP. ALL items will be implemented by each community.**																
A-J	Presentations and Displays	Provide displays and presentations for water quality-related events upon request and availability of staff time display to public at least once in the next 5 years.		Citizens including the general public and county and municipal employees	x	x	x	x	x	x	x	x	x	x		Minimum of once during 5-year permit cycle	MS4 Permittees; CRWC	Host display once during permit cycle
A-K	Regional Public Education Materials	Distribute resources available from SEMCOG including: Seven Simple Steps to Clean Water brochures, tip cards and kids activity sheets. Topics include: fertilizer, car care, pet care, household hazardous waste disposal, earth-friendly landscaping, water conservation and storm drain awareness. Materials are avialable on the Ours to Protect Website. at http://www.semcog.org/ourstoprotect.aspx		Citizens including the general public and county and municipal employees	x	x	x	x	x	x	x	x	x	x	x	Annually	MS4 Permittees; CRWC	Distribute educational materials (pamphlets, brochures, tip cards) on request from MS4 permit communities, on various topics at community facilities and events. MS4 communties have an excel spreadsheet to track distribution.

Red Run Drain (R2W) - Updated 2019

PEP TOPIC	BMP IDENTIFIER	BMP DESCRIPTOR	PARTNER COLLABORATION	Target Audience	PEP Element A - Personal Watershed Stewardship	PEP Element B - Ultimate Storm Water Discharge Locations and Potential Impacts	PEP Element C - Public Reporting of Illicit Discharges	PEP Element D - Car, Pavement PowerWashing	PEP Element E- Pesticides, Herbicides, Fertilizer Education	PEP Element F-Grass Clippings, Leaf Litter, Animal Waste Disposal	PEP Element G - Waste Management Assistance	PEP Element H- Septic System Maintenenance	PEP Element I - Benefits of Green Infrastructure LID	PEP Element J - Mgt. of Riparian Lands	PEP Element K - Commercial, Industrial, Institutional Education	FREQUENCY	RESPONSIBLE PARTY	MEASURABLE GOAL
A-K	Subwatershed Website	Hosted by CRWC website; features subwatershed map, photos, description, events and links to education resources. MS4 permittees will provide links to the CRWC website of their own websites.		Citizens including the general public and county and municipal employees	x	x	x	x	x	x	x	x	x	x	x	Continuous	MS4 Permittees; CRWC	Provide working links to Web sites. MS4 permit communties have an excel document to track link locations and website hits.
A-K	Community Information	Write or distribute articles about watersheds, green infrastructure, watershed friendly practices for homeowners, and other stormwater pollution related topics for publication into existing municipal newsletters, enewsletters and websites; Four articles per year will be given to MS4 permittees from CRWC for publication in newsletters and other publications. MS4 permittees will distribute these article to the public each year via print or digital media.		Citizens including the general public and county and municipal employees	x	x	x	x	x	x	x	x	x	x	x	Annually	MS4 Permittees; CRWC	Publish via print or digital media 4 articles per year.
A,C,G	Household Hazardous Waste Information	Continue to publicize information on the NO HAZ, Resource Recovery and Recycling Authority of Southwest Oakland County (RRRASOC) and Southeastern Oakland County Resource Recovery Authority (SOCRRA) programs to citizens and employees of Oakland County on WRMD's Web site (www.oakgov.com/waste/nohaz). NO HAZ, RRRASOC and SOCRRA provide safe disposal of household hazardous waste to Oakland County municipalities to the maximum extent practicable (as		Residents	x		x				x					Continuous	MS4 Permittees	Provide working links to websites. MS4 permit communties have an excel document to track link locations and website hits.
A,G	Recreational Vehicle Waste Dumpsites	Post links and/or locations to recreational vehicle (RV) waste dumpsites in the region on Southeast Michigan Council of Government's (SEMCOG) Ours to Protect Web site at: www.semcog.org/OursToProtect_HouseholdWaste.aspx or provide a link to Michigan RV dump sites (www.rvdumps.com/mi.htm) on Oakland County Waste Resource Management Division's Web site at: www.oakgov.com/waste/. MS4 may add this to thier SWMP		Residents, visitors to the area	x						x					Continuous	MS4 Permittees	Provide working links to websites and track number of hits. MS4 permit communties have an excel document to track link locations and website hits.
A-J	Riparian Information Distribution	Distribute riparian landowner educational material (i.e. Waterfront Wisdom brochure) make available to their public via mailings or through their website. events, meetings, and through mailings. MS4 may add this to thier SWMP Maintain WRC's riparian education Web site (www.oakgov.com/riparian)		General Public, Riparian Landowners	x	x	x	x	x	x	x	x	x	x		Continuous	MS4 Permittees	Provide working link to website and track number of hits. MS4 permit communties have an excel document to track link locations and website hits.
A,C,G	Household Hazardous Waste Information	Continue to publicize information on the NO HAZ, Resource Recovery and Recycling Authority of Southwest Oakland County (RRRASOC) and Southeastern Oakland County Resource Recovery Authority (SOCRRA) programs to citizens and employees of Oakland County on WRMD's Web site (www.oakgov.com/waste/nohaz). NO HAZ, RRRASOC and SOCRRA provide safe disposal of household hazardous waste to Oakland County municipalities to the maximum extent practicable (as		Residents	x		x				x					Continuous	MS4 Permittees	Provide working links to websites. MS4 permit communties have an excel document to track link locations and website hits.

MS4 PEP Community Specific Actions - Checklist & Tracking

Presentations and Displays - Display must be hosted once every five years. Please note the date(s) when you hosted the CRWC stormwater display and/or any other public display in your community/location. Presentations are upon request and availability of staff time. CRWC does presentations in every subwatershed throughout the year. Track your sharing of flyers and/or if you hosted a CRWC presentation you may track that here as well.

Topic of Display/Presentation	Date	Location	Attendance (if Applicable)	Photo of display? Flyer distributed? Y/N

Articles - A minimum of 4 articles are provided to you by CRWC. Please track your distribution of articles below (quantity, method, etc.). You may track distribution of aditional articles/information here as well.

Title	Date	Location	Quantity	Method of Distribution

Brochures/Educational Materials - Please track your distribution of any brochures and other educational materials below (quantity, method, etc.).

Title	Date	Location	Quantity	Method of Distribution

Website Checklist - the following links must be displayed and in working order in an easy to access/locate page on your individual community/district website.

Household Hazardous Waste (By County)		Paste Link to your Webpage below where link is displayed	Date	# of Hits
Oakland	https://www.oakgov.com/edca/planning/wasteandrecycling/Pages/nohaz.aspx			
Macomb	http://health.macombgov.org/Health-Programs-EnvironmentalHealth-RiskAssessment-HouseholdWaste			
Wayne	https://www.waynecounty.com/departments/environmental/landresources/household-hazardous-waste.aspx			
Recreational Vehicle Waste Information		**Paste Link to your Webpage below where link is displayed**	**Date**	**# of Hits**
RV Dumps - Michigan	http://www.rvdumps.com/michigan/			
Riparian Land Owner Information		**Paste Link to your Webpage below where link is displayed**	**Date**	**# of Hits**
Waterfront Widsom Booklet	content/uploads/Waterfront_Wisdom_booklet.pdf			

Community Links - Please include links ot both CRWC and SEMCOG websites. Also include any other relevant community links that that you have chosen to include that are unique to your community/district and valuable resources to your residents/public. This could include community organizations, links to articles or resources, etc.

Community Group/Organization/Resource	Link	Paste Link to your Webpage below where link is displayed	Date	# of Hits
CRWC	www.crwc.org			
SEMCOG	www.SEMCOG.org			

Candice S. Miller

Public Works Commissioner
Macomb County

January 8th, 2019

Mr. Martin Hendges
Ms. Sarah Flynn
MDEQ -Water Resources Division
Southeast Michigan District Office
27700 Donald Court
Warren, MI 48093

RE: Watershed-wide Public Education Plan Submittal for the Clinton River Watershed

Dear Mr. Hendges and Ms. Flynn:

The Macomb County Public Works Office is writing to affirm its commitment to assist communities in implementing the collaborative Public Education Plan (PEP) that has been developed for the storm water permit holders within the Clinton River Watershed.

The Macomb County Public works Office understands that the PEP is a requirement of the National Pollutant Discharge Elimination System (NPDES) permit administered by the Michigan Department of Environmental Quality. The permit regulates stormwater discharges from municipal separate storm sewer systems, in compliance with the provisions of the Federal Water Pollution Control Act (Clean Water Act), as amended (33 U.S.C. 1251 et seq), and Michigan Act 451, Public Acts of 1994, as amended, Parts 31 and 41.

The Macomb County Public Works Office is included as a responsible party for the implementation of a variety of actions in the PEP because many of our activities and programs offer excellent opportunities for engaging the public in watershed education and environmental stewardship.

If you have any questions, please feel free to contact Jeff Bednar, Environmental resources Manager, at jeff.bednar@macombgov.org or (586)493-0685.

Sincerely,

Candice S. Miller

Candice S. Miller, Commissioner
Macomb County Public Works

OFFICE LOCATION: 21777 Dunham Road, Clinton Township, Michigan 48036 ● Phone: 586-469-5325 ● Fax: 586-469-5933
ENGINEERING ● Phone: 586-469-5910 ● Fax: 586-469-7693 ◊ **SOIL EROSION** ● Phone: 586-469-5327 ● Fax 586-307-8264

WRC
WATER RESOURCES COMMISSIONER
Jim Nash

December 21, 2018

Mr. Martin Hendges
Ms. Sarah Flynn
MDEQ – Water Resources Division
Southeast Michigan District Office
27700 Donald Court
Warren, MI 48093

RE: Watershed-wide Public Education Plan Submittal for the Clinton River Watershed

Dear Mr. Hendges and Ms. Flynn:

The Oakland County Water Resources Commissioner's Office (WRC) is writing to affirm its commitment to assist communities in implementing the collaborative Public Education Plan (PEP) that has been developed for the storm water permit holders within the Clinton River Watershed.

The WRC recognizes that the PEP is a requirement of the National Pollutant Discharge Elimination System (NPDES) administered by the Michigan Department of Environmental Quality. The permit regulates stormwater discharges from municipal separate storm sewer systems, in compliance with the provisions of the Federal Water Pollution Control Act (Clean Water Act), as amended (33 U.S.C. 1251 et seq), and Michigan Act 451, Public Acts of 1994, as amended, Parts 31 and 41.

Oakland County is included as a responsible party for the implementation of a variety of actions in the PEP because many of our activities and programs offer excellent opportunities for engaging the public in watershed education and environmental stewardship.

If you have any questions, please feel free to contact me at 248-858-5264.

Sincerely,

Jacy L. Garrison
Environmental Planner II

One Public Works Drive • Building 95 West • Waterford, MI 48328-1907
Phone: 248.858.0958 • Fax: 248.858.1066 • *www.oakgov.com/water*

MICHIGAN STATE UNIVERSITY | Extension

January 21, 2019

Mr. Martin Hendges
Mrs. Sarah Flynn
MDEQ -Water Resources Division
Southeast Michigan District Office
27700 Donald Court
Warren, MI 48093

Re: Watershed wide Public Education Plan Submittal for the Clinton River Watershed

Dear Mr. Hendges and Mrs. Flynn:

The Michigan State University (MSU) Extension is writing to affirm its commitment to assist communities in implementing the collaborative Public Education Plan (PEP) that has been developed for the stormwater permit holders within the Clinton River Watershed.

MSU Extension recognizes that the PEP is a requirement of the National Pollutant Discharge Elimination System (NPDES) administered by the Michigan Department of Environmental Quality. The permit regulates stormwater discharges from municipal separate stormwater sewer systems, in compliance with the provisions of the Federal Water Pollution Control Act (Clean Water Act), as amended (33 U.S.C. 1251 et seq), and Michigan Act 451, Public Acts of 1994, as amended, Parts 31 and 41.

MSU Extension is included as a responsible party for the implementation of a variety of actions in the PEP because many of our activities and programs offer excellent opportunities for engaging the public in watershed education and environmental stewardship. Furthermore, the programming and resources offered are science-based and delivered through a collaboration of faculty and specialists from Michigan State University in partnership with local organizations and agencies. When possible, programming is offered as both classroom and field-based learning opportunities, and is tailored to meet the specific areas of interest and needs of the target audience.

If you have any questions, please feel free to contact me at (517) 432-7602 or ivand@msu.edu.

Sincerely,

David J. Ivan, Ph.D., Director
Community, Food & Environment Institute
Michigan State University Extension

MSU EXTENSION

Community, Food & Environment Institute

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Michigan State University
East Lansing, MI 48824-1039

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MSU is an affirmative-action, equal-opportunity employer.

City of Center Line

Storm Water Management Program (SWMP)

Appendix C

Illicit Discharge Elimination Plan (IDEP)

November 2007
Revised May 24, 2019

City of Center Line Illicit Discharge Elimination Plan
IDEP / TMDL and Phase II Outfall Screening Form

CITY OF CENTER LINE

Illicit Discharge Elimination Plan

And

Total Maximum Daily Load (TMDL)

Individual Permit No. MI0060237
Revised May 24, 2019
November 1, 2004

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1.0 INTRODUCTION

1.1 General Overview

The Illicit Discharge Elimination Plan (IDEP) is a program that is designed to prohibit and effectively eliminate illicit discharges and connections, including discharges of sanitary wastewater to the permittee's separate storm sewer system.

The term separate storm sewer system includes both open and enclosed drainage systems that are owned or operated by the permittee and discharge either to a surface water of the state or to a separate storm water drainage system operated by another public body. Municipal separate storm sewer systems may include orphan or abandoned drains within the permittee's jurisdiction.

Open county drains that are considered to be surface waters of the State are not considered to be part of the County's separate storm sewer system. The appropriate IDEP activities for these drains are the same as they would be for any water of the state. They included seeking the point sources where the permittee's separate storm sewers discharge to these waters of the state, and performing dry-weather screening at those point sources. Privately owned and operated drainage systems that discharge directly to surface waters of the state do not have to be included under the IDEP. However, to develop a comprehensive watershed management plan, these county drains and private discharges were considered when assessing the nature and status of the watershed. These systems were assessed to determine if they were contributing excess nutrients, bacteria, contaminants and flow to the watershed.

IDEP implementation under the Watershed Permit was not restricted to just the urbanized area but was required to be implemented throughout the watershed area(s) under the permittee's jurisdiction for which they have coverage as was indicated in their Certificate of Coverage under the General Watershed Permit MIG619000.

Continuing under the City's individual jurisdictional permit, the IDEP will be an extension of the dry weather screening (DWS) and total maximum daily load (TMDL) monitoring required under the new permit as one of the six minimum measures.

1.2 Purpose

The Center Line IDEP is an on-going program whereby the City remains vigilant to prohibit and effectively eliminate illicit connections and illicit discharges, including discharges of sanitary wastewater to the City of Center Line's (Center Line's) separate storm water drainage system. Where applicable the Plan also identifies the interaction and responsibilities of Center Line with Macomb County

and other watershed partner communities located within the Red Run Watershed (R2W).

Center Line's basic philosophy is that a successful IDEP is implemented, never completed. The primary components of the IDEP include:

1.) Identification of illicit connections and illicit discharges through pro-active annual investigations and documentation of passive observations.
2.) Detailed documentation and reporting of investigation results both internally, and to outside agencies as required.
3.) Elimination of identified illicit connections and illicit discharges by DPW personnel, Center Line contracted work, and ordinance enforced private repairs, as applicable.
4.) Maintenance of updated system wide maps and databases.
5.) Periodic evaluation of the IDEP to determine effectiveness and incorporate improvements to the IDEP identified through experience.

An effective Illicit Discharge Elimination Program (IDEP) required a variety of government entities working cooperatively. By working on a watershed approach, duplication of effort was avoided when locating and eliminating illicit discharges/connections and training and education activities can be conducted in a more effective and cost efficient manner. Under the current IDEP the City will continue to coordinate activities with Macomb County, watershed partner communities and the Clinton River Watershed Council (CRWC) as necessary to protect and restore the surface waters of the state within the aforementioned watershed.

Based upon historical perspective and Macomb County data, this Plan has been developed with a focus on sanitary wastewater that is connected, discharging or seeping into Center Line's separate storm water drainage system.

1.3 Authority

The Part 21 Rules of Michigan Act 451, Public Acts of 1994, as amended, Part 31, provide authority to issue permits for wastewater discharges. The Michigan Department of Environmental Quality administers the NPDES permit program in the State of Michigan.

Anyone discharging or proposing to discharge wastewater to the surface waters of the state shall make application for and obtain valid NPDES permit or certificate of coverage under a valid general permit from the Department of Environmental Quality. The NPDES permit is required under Section 402 of the Federal Clean Water Act, as amended (33 U.S.C 1251 et seq, P.L. 92-500, 95-217) and under Michigan Act 451, Public Acts of 1994, as amended.

General permits which authorize multiple discharges of similar wastewater are issued in accordance with Act 451 of 1994, as amended, Part 31 (the "Michigan Act") and Rule 323.2191 of the Michigan Administrative Code. General Permit No. MIG619000 set forth the conditions necessary to receive permit coverage for discharges of storm water and certain types of non-storm water from separate storm water drainage systems. The applicability of this general permit shall be limited to wastewater discharges which are of this type and which meet the criteria established in this general permit.

General Permit No. MIG619000 was complemented by MDEQ issued Certificate of Coverage No. MIG610304, designated Center Line MS4-Macomb, constituting a valid authorization to discharge.

General Permit No. MIG619000, Section A, Subsection 3, Sub-subsection a, dictates submittal of an IDEP. Certificate of Coverage No. MIG610304, issued under the General Permit, required submittal of the IDEP by November 1, 2004 and implementation of the IDEP to begin upon receiving approval from the MDEQ or 90 days after submittal, whichever came first.

Moving forward under the City's jurisdictional permit, the City will continue to develop, implement and enforce the storm water management program (SWMP) designed to reduce the discharge of pollutants from the drainage system to the Maximum Extent Practicable (MEP), to protect the designated uses of the waters of the State, to protect water quality and to satisfy the appropriate water quality requirements of the Federal Act and the Michigan Act.

Where the TMDL establishes effluent limitations for the permittee's storm water based on a waste load allocation, MEP includes, but is not limited to, the development, implementation and enforcement of storm water controls designed to meet the permittee's responsibilities defined in the corrective action plan to achieve the TMDL. The City has implemented Best Management Practices (BMPs) to comply with the six minimum measures including IDEP. For the water bodies impacted or potentially impacted by the City's MS4, the following TMDL's have been established:

E. coli Clinton River	TMDL	ID-91
E. coli Red Run Drain and Bear Creek	TMDL	ID-58

1.4 Location

The City of Center Line (City or Center Line) is located in the Southwest area of Macomb County, Michigan, about one-and-one-half miles North of Detroit city limits and surrounded on all sides by the City of Warren. Center Line is part of the vast urban area covering Wayne, Oakland and Macomb Counties in Southeast Michigan, commonly referred to as the Detroit Metropolitan Area or Region.

1.5 Precipitation

Based upon National Weather Service Data, mean annual rainfall in the Center Line area is 31.49 inches, with mean monthly values ranging from 2.05 to 3.32 inches. Mean annual snowfall is 31.7 inches. An average of 131 days per year have precipitation of 0.01 inches or more.

1.6 Soils

Generally, the soils encountered in borings consist of upper layers of top soil or fill with either fill deposits or clay soils lying beneath the surface materials. Underlying these, the predominant strata encountered is stiff moist blue clay with sand and pebbles. Some brown clay as well as streaks of sand and silt are also found.

1.7 Surface and Storm Drainage

Center Line lies in the Southern portion of the Clinton River Drainage Basin with the storm water from the City discharged to the Bear Creek – Red Run branch of the river. Center Line is part of the Red Run Sub-Watershed of the Clinton River.

The Center Line storm drainage system is completely enclosed, with all storm water routed through underground sewers. There is no open drainage, or surface water, within the city limits.

The storm drainage from Center Line reaches the Clinton River by way of Bear Creek near its intersection with the Red Run Drain in the Northern part of the City of Warren. Three primary trunk sewers provide drainage for Center Line. These three primary trunk sewers are the Lorraine Drain, the Center Line Relief Drain and the Center Line Tile Drain.

The majority of drainage in the City of Center Line South of Ten Mile Road is provided by the eleven (11) foot diameter Lorraine Drain which passes along the East City Limits of Center Line and flows into Bear Creek immediately North of Thirteen Mile Road. The Lorraine Drain receives a large flow contribution from the 78 inch storm drain flowing from the West at the South City Limits of Center Line.

The portion of Center Line North of Ten Mile Road is drained by two storm sewers located in the Van Dyke Avenue (M-53) right-of-way (ROW) and flowing to the North. The Center Line Tile Drain is a 24 inch diameter sewer which was an old combined sewer reused as a storm drain when the new 48 inch sanitary interceptor was installed under Van Dyke. The Center Line Tile Drain flows into the Center Line Relief Drain at the intersection of Van Dyke and the I-696 Service Drive.

The remaining portion of the flow is carried by the aforementioned Center Line Relief Drain. This drain was originally constructed in the 1920's as a combined

sewer as part of a planned treatment plant to be constructed at Van Dyke and Bear Creek. Areas as far West as Royal Oak were to send combined sewage to this proposed Waste Water Treatment Plant (WWTP). Bonds were sold to finance construction costs and the Center Line Relief Drain constructed. At some point shortly after construction, the proposed combined sewage program was challenged in court and ruled to be outside the jurisdiction of the County to construct under the Drain Code and plans abandoned. However, the Center Line Relief Drain had already been constructed. The bond holders were never reimbursed and the drain became an "orphan" with no legal owner. However, the Center Line Relief Drain has been in the ground and in use to varying degrees by Center Line, the City of Warren, Macomb County and the State of Michigan. Within Center Line, this drain varies in size from 54 inch at Ten Mile Road to 84 inch at the North City Limits.

1.8 Existing Sewer System

Center Line's sewer system consists of approximately 162,000 linear feet (31 miles) of storm sewer and 159,000 linear feet (30 miles) of sanitary sewer.

The sewerage system in Center Line was developed over two separate periods of time. The initial system, constructed prior to World War II, was sized to accommodate combined sewage. The pipe used was clay with oakum and mortar joints spaced at approximately four (4) feet.

A program for sewer separation was undertaken after World War II. As part of the program, both sanitary and storm sewers were constructed city-wide, thereby dramatically reducing wet weather sanitary flows and basement flooding. During this second phase, the sanitary sewer pipe used was primarily clay with premium-type joints (plasticized molded or rubber) spaced at six (6) to eight (8) feet on center.

In addition, Center Line adopted a sewer use ordinance forbidding the connection of roof drains to the sanitary sewer system. The ordinance has been widely enforced but some non-compliance may still remain.

Footing drains in Center Line remain connected to the sanitary sewer system and are probably the largest single source of infiltration. In most situations, the connection of the footing drain to the storm sewer is not feasible without separation from the sanitary lead and installation of a sump pump.

All sanitary collector sewers in Center Line discharge to the 48 inch diameter sewer under Van Dyke Avenue (M-53). This main interceptor flows from North to South and discharges into the pump station at the South city limits of Center Line. The size of the 48 inch interceptor was required to accommodate standard mining practices at the time of construction and was not sized for its carrying capacity. Therefore, the sewer flow depth is approximately 12 inches at a flow of 6.5 cfs.

The sanitary pump station located at Stephens and Van Dyke pumps all the sanitary flow into a 24 inch diameter gravity interceptor which flows South down Van Dyke Avenue through the CL-S-1 flow meter at Eight Mile Road into the Detroit sewer system at Conner Avenue and to the City of Detroit Sewage Treatment Facility. The lift station consist of three pumps powered by electric motors with capacities of 800 gpm, 1,900 gpm and 2,700 gpm. In addition, there is a 5,400 gpm pump powered by a diesel engine which can be used in the event of multiple pump failures and the standby natural gas fired diesel generator.

1.9 Acronyms

For a quick reference, following is a list of all the acronyms used in the Plan:

ASWPM	Assistant Storm Water Program Manager
City	City of Center Line
CRWC	Clinton River Watershed Council
DPW	Center Line Department of Public Works
IDEP	Illicit Discharge Elimination Program
MCHD	Macomb County Health Department
MCPWO	Macomb County Public Works Office
MDEQ	Michigan Department of Environmental Quality
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
Plan	Illicit Discharge Elimination Plan
MCDR	Macomb County Department of Roads
R2W	Red Run Watershed (Sub-watershed)
SWIM	Surface Water Improvement and Monitoring
SWPM	Storm Water Program Manager

1.10 Definitions

In order to ensure the Plan is developed and implemented with a clear understanding of the type of sources to be eliminated, following are key terms to be understood:

BULKHEAD: An intentional plug placed into a sewer intended to 1) eliminate infiltration from an abandoned sewer or sewer section, 2) eliminate a point of connection between separated sewer systems, and/or 3) reroute flow. Usually constructed of brick and mortar, ideally two separate layers with the interstitial space filled with a hydrophilic grout.

DYE TEST: An investigative procedure whereby non-toxic tracer dye is introduced within a sanitary or drainage system as a visual indicator allowing personnel to track the flow to an unknown outfall.

E. COLI: Escherichia coli. A member of the fecal coliform group of bacteria. This organism in water indicates fecal contamination. Laboratory analysis of

samples taken from the storm sewer system can be tested for this organism as an investigative procedure to identify illicit discharge of sanitary waste.

ILLICIT DISCHARGE: Any discharge (or seepage) to the separate storm water drainage system that is not composed entirely of storm water or uncontaminated groundwater. Examples of illicit discharges include dumping of motor vehicle fluids, household hazardous wastes, grass clippings, leaf litter, or animal wastes, or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-storm water or ground water waste into the separate storm water drainage system.

ILLICIT CONNECTION: A physical connection to the separate storm water system that 1) primarily conveys illicit discharges into the system and/or 2) is not authorized or permitted by the City of Center Line or Macomb County.

POINT SOURCE: An outfall from a drainage system to waters of the state, or a point where a storm water drainage system discharges into a system operated by another public body. (e.g. a lead from an individual residence at the point of connection to a storm sewer or separate storm water system sewer.)

SANITARY SEWER: A sewer that carries liquid or water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with minor quantities of ground waters, storm waters and surface waters that are not admitted intentionally.

SANITARY LEAD: A private sewer that carries wastewater from an individual residence, commercial building, industrial plant, or institution to the municipal sanitary sewer main in the public right-of-way or easement. Also commonly referred to as a sanitary lateral.

SEPARATE STORM WATER SYSTEM: A system of enclosed storm sewers that are owned and operated by the City and discharge to a separate storm water system operated by another public body.

SIGNIFICANT ILLICIT DISCHARGE: A discharge that shows evidence of impairing water quality in the receiving water.

STORM SEWER: A sewer which carries storm waters, surface waters and drainage, but excludes wastewater and industrial waters, other than unpolluted and cooling water.

STORM WATER: Includes storm water runoff, snow melt runoff, and surface runoff and drainage.

2.0 ILLICIT DISCHARGES AND ILLICIT CONNECTIONS

2.1 Finding Point Source Discharges

2.1.a Field Verification of Point Sources

Center Line has presently identified 208 point sources. Each point source is identified with a unique outfall number in the format "CTL-X-###". In this numbering convention "X" is used to represent the receiving water where:

"L"	=	Lorraine Drain
"R"	=	Center Line Relief Drain
"T"	=	Center Line Tile Drain

The "###" represents a unique sequential number, currently 001 through 208. Immediate re-verification of existing known point sources is not feasible due to the total number of sources and the predominance of blind taps to the storm sewer system. Center Line considers previous television inspections, reviewed and incorporated into the storm system maps, as verification of existing known point sources.

DPW personnel are to remain vigilant for previously unknown point sources. All point sources encountered during the course of daily work tasks and construction observation activities are to be reported to the SWPM or ASWPM. An IDEP General Observation Form is available for DPW employees to report encountered point sources. The SWPM or ASWPM will review the reported point source for comparison with known existing point sources. Any future storm sewer televising conducted, for any reason, shall similarly be reviewed by the SWPM or ASWPM. If a previously unknown point source is identified, the source will be assigned a unique outfall number and duly recorded. The SWPM or ASWPM will be responsible for ensuring that maps and records are appropriately updated and the new point source is included in the next annual progress report.

The Center Line storm sewer system is presently mapped in GIS format. This map was developed from previous system base maps, historical blueprints, available site plans, field investigations, and television inspections of the system. "Record Plan" drawings are required for private development. These "Record Plans" are reviewed and incorporated into the GIS storm sewer system maps.

Center Line does not have any "open" water within the city limits. Walking of drains and other surface waters as a method of finding previously unknown point sources from separate storm sewer systems is not applicable.

All existing known point sources are presently located by Section, Township and Range as well as being included on the storm sewer

system map of the City. Point sources are further located by GPS latitude and longitude. Any previously unknown point sources identified will be similarly located.

2.1.b Training

A copy of the Plan is available to all DPW personnel for their review and reference. These personnel represent the work force of the IDEP. After all personnel have had an opportunity to read the Plan, the SWPM and ASWPM will conduct a question and answer session at a morning staff meeting. After this meeting, all personnel will be required to sign an affidavit acknowledging receipt and understanding of the Plan.

At any time, personnel may forward additional questions regarding the Plan to the SWPM or the ASWPM. These questions may be presented in writing or in person, and will be answered by the SWPM or ASWPM. If the SWPM or ASWPM identifies an issue of consistent concern or repeated confusion, additional staff meetings will be conducted to review specific issues and/or provide further clarification. ***The SWPM and ASWPM will maintain detailed records of training sessions including but not limited to: date, attendance, duration, items discussed and recommendations for further training.***

Additional training sessions will be conducted in the field by the SWPM and/or ASWPM with smaller groups and individuals. These training sessions may include but not be limited to:

1.) Techniques for identifying and tracing illicit discharges / connections. This will include the use of visual and olfactory observations, reading the system maps, recognition of sub-systems and identification of proper and effective sample points.
2.) Recognition of visual and olfactory observations. This will include observations indicative of a potential illicit discharge / connection such as toilet paper, grease, chemical plumes, household waste and chemical or sewage odors. Also included will be recognition of naturally occurring phenomena such as bacterial sheens, slimes and films, bryozoans, pollen, blue-green and green algae, tannins and foams.
3.) Techniques for confirmation of illicit discharges/connections. These will include E. coli sampling, and dye testing.
4.) Techniques for sample collection, chain-of-custody procedures, sample transport and recording. This will also include coordination with analytical laboratories.
5.) Techniques for dye testing. This will include procedures for approval to use tracer dyes, identification and selection of dye introduction points, careful use and handling of tracer dye and protection of private property during use. Also included will be

specific techniques proven effective in Center Line such as use of fire hydrants to induce dry weather flow within the storm sewer and proper hydrant maintenance once completed. The “Notice of Intent to Treat” under the General Rule 97 Certification of Approval will be obtained by the City from the MDEQ in the event tracer dyes are used for sewer investigations

6.) Proper methods/procedures for eliminating the illicit discharges / connections. Adherence to Center Line’s philosophy of achieving a physical separation solution, whenever possible, rather than applying a temporary fix.

The SWPM and ASWPM will issue a copy of the Plan to the City Building Inspector. The City Building Inspector will receive training in identification of illicit discharges / connections and procedures for reporting to the SWPM and ASWPM. The City Building Inspector will remain vigilant in searching for suspected illicit discharges / connections during all inspections. Further, the City Building Inspector will require dye testing by DPW personnel to confirm separation of private storm and sanitary systems as a condition placed on any application for Building Permit and/or Certificate of Occupancy.

The SWPM and ASWPM will issue a copy of the Plan to the City Engineers. The City Engineers shall, during the Engineering Plan Review process, review submitted utility plans for separation of private storm and sanitary systems. The City Engineers shall notify the SWPM, ASWPM and Macomb County of any proposed new outfalls to the County Drains.

All personnel participating in IDEP activities will receive training on associated safety issues. This training will include:

1.) Confined Space Entry. Center Line presently maintains confined space entry and rescue certification for all DPW personnel. The SWPM and ASWPM will ensure these certifications remain current for all personnel associated with the IDEP. While it is recommended that any required sampling be done with a dipper or similar method to avoid entry into confined spaces, investigative and repair efforts might ultimately involve entry into confined spaces. In the event entry into a confined space becomes necessary, a valid entry permit must be completed and appropriate confined space entry procedures will be followed.

2.) Biological Hazard. As illicit discharges / connections from the sanitary sewer may be present in the storm sewer system, all precautions should be taken to prevent contamination of the sampling personnel by the wastewater. Rubber gloves should be worn as well as protective eyewear. In all cases, sampling

personnel should wash their hands and decontaminate their equipment with hot, soapy water and multiple rinses with hot water.

3.) Chemical Hazard. Illicit discharges / connections to the storm sewer may include effluent from industrial sources within the City with unknown chemical contamination. Personnel should avoid contact with or ingestion of the wastewater. An additional hazard is associated with the sampling containers for E. coli in the form of a small amount of preservative. Personnel should wear rubber gloves and protective eyewear.

2.1.c Dry Weather Screening of Point Source Discharges

GENERAL

- Screening shall be as directed by the SWPM and ASWPM.
- Screening shall be conducted during dry weather conditions. Allow a minimum of 72 hours after previous storm event and avoid times of snow melt to ensure observation of only dry weather flow.
- Center Line remains committed to the team approach developed with the Macomb County Health Department (MCHD). IDEP efforts will be coordinated as much as possible with the MCHD. The contact number for the Surface Water Improvement and Monitoring (SWIM) Team is (586) 469-5236.

SCREENING SCHEDULE

Dry weather screening shall occur in May and October of each calendar year. The Plan goal is to conduct screening at twenty percent (20%) of the City's points of discharge locations in both May and October, to complete all of the locations within the five (5) year permit cycle.

Dry Weather screening shall be scheduled Monday through Thursday between the hours of 10:00 a.m. and 3:00 p.m.

Additional screening locations shall be prioritized by the SWPM and ASWPM. Priority will be established based upon the following criteria:

1.) IDEP General Observation reports submitted by DPW personnel and the City Building Inspector.
2.) Known water quality concerns in County Drains as reported by the Macomb County Health Department.
3.) Community development patterns and historical information.
4.) Time interval since last screening. *

* Although direct screening of every point source is not feasible due to the predominance of blind taps to the storm sewer system, it is the IDEP's goal to conduct dry weather screening of all discharge points or the next available upstream manhole within the permit cycle.

SCREENING PROCEDURES

Dry weather screening shall be conducted at the locations directed by the SWPM and/or ASWPM.

Dry weather screening shall consist of a minimum of two separate investigations. Allow a minimum of one week between investigations.

A separate IDEP Screening Form shall be completed for each location, each time it is investigated. The IDEP Screening Form shall record the following information:

1.) Date and Time.
2.) Outfall Number and identification as either "Actual Outfall" or "Tributary To Outfall" with an explanation (Refer to Point Source Identification Table)
3.) Location. Be as specific as possible. When applicable, utilize Center Line Structure Numbers, cross streets, visible landmarks and street addresses.
4.) Presence or absence of flow during dry weather.
5.) Water clarity and color. (Distinguish between flow and stagnant water.)
6.) Presence or absence of foam, oil sheen, trash, and/or floatable material.
7.) Presence or absence of bacterial sheen or slimes.
8.) Any staining of the sewer and/or structure and structure condition.
9.) Evidence of Inflow and/or Infiltration.
10.) Odor.
11.) Condition of Vegetation (Not applicable as not existing outfalls)
12.) Notete if a sample was taken and the sample identification number.

At each dry weather screening location where dry weather flow is evident, a sample will be taken for laboratory analysis of *E. coli* by the MCHD (or other laboratory if necessary for additional parameters including ammonia, fluoride, detergents and pH). The following procedures shall be followed for sample collection:

1.) Complete the heading information on the Chain-of-Custody Form.
2.) Label a sampling container with a unique sampling number on the sampling jar/bottle and on the sampling jar/bottle lid. The sampling number shall be composed of a single letter representing the outfall drain, three numbers representing the Outfall Number to which the location is tributary, and three numbers representing the sequential number of manholes upstream from the Outfall that the sample is taken. For example, a sample taken six manholes upstream of Outfall Number CTL-R-030 would be labeled "R-030-060", while a sample taken at Outfall Number CTL-L-012 would be labeled "L-012-000".
3.) Fill one sample jar/bottle with flow from the location.

4.) Wipe off the sample jar/bottle and place in a cooler with an ice pack.
5.) Record the sample number and all associated information on the Chain-of-Custody Form. Be sure to also note the sample number on the IDEP Screening Form.
6.) Repeat steps two (2) through five (5) for all locations directed by the SWPM and/or ASWPM.
7.) If a representative of the MCHD is present, relinquish samples for MCHD analysis. Sign the "Relinquished By" portion of the Chain-of-Custody Form and witness the MCHD representative sign the "Received By" portion. Request and receive a copy of the Chain-of-Custody Form prior to leaving. If you are directed by the SWPM and/or ASWPM to deliver the samples to another laboratory, perform these same Chain-of-Custody Form procedures at the laboratory.
8.) Deliver the copy of the Chain-of-Custody Form to the SWPM or ASWPM.

Personnel performing dry weather screening ***ARE*** authorized and encouraged to investigate locations in addition to those directed by the SWPM and/or ASWPM when observations and field conditions warrant. An example would be to trace sustained dry weather flow or track evident floatable materials and or chemical plumes. If in doubt, contact the SWPM or ASWPM for confirmation. IDEP Screening Form and Sampling procedures shall be followed for ***EVERY*** location investigated.

CONFIRMATION OF ILLICIT DISCHARGES/CONNECTIONS

Two successive investigations with no visual evidence of an illicit discharge / connection AND with no observable flow or two successive E. coli test results of less than 1,000 counts per 100 mL shall be considered indicative of an Outfall or subsystem that is currently free of Illicit Discharges/Connections.

Visual evidence of an illicit discharge/connection OR two successive E. coli tests in excess of 1,000 counts per 100 mL shall be considered indicative of an illicit discharge/connection within the subsystem being screened (or at the Outfall being tested).

Results indicative of an illicit discharge/connection must be traced to the source(s) and confirmed. The procedure for confirmation of an illicit discharge/connection is as follows:

1.) Perform dry weather screening, including sampling as applicable, at additional locations to confirm the source. If confirmation is not possible, the additional screening will narrow the search area to the greatest extent possible. The SWPM and ASWPM will review the storm sewer system to identify additional screening locations.

2.) If dry weather screening has not confirmed the source, but narrowed the search to the greatest extent possible, the SWPM and/or ASWPM will perform or delegate a review of the storm sewer television inspection tapes for the area identified through dry weather screening. This review will search for evidence of an illicit discharge / connection that was not identified during previous reviews. If the source is not confirmed, this review will note all unidentified and/or suspicious taps to identify residences and facilities requiring dye testing.

3.) All residences and facilities identified in the television inspection tapes review will be dye tested. Dye Testing will consist of:

- The "Notice of Intent to Treat" under the General Rule 97 Certification of Approval will be obtained by the City from the MDEQ to use non-toxic tracer dye. Requests to discharge tracer dyes must be submitted to the Water Division District Supervisor. Information on the requests can be found by going to the MDEQ website at:

  https://www.michigan.gov/deq/0,4561,7-135-3313_46123---,00.html

  Select Assessment of Michigan Waters and then select "Water Treatment Additives List".
- Obtain permission from the owner to enter the premises and conduct a dye test.
- Conduct a visual inspection of the interior plumbing system. If multiple systems or building services are noted exiting the residence or facility, separate appurtenances or other points of introducing non-toxic tracer dye must be identified.
- Introduce non-toxic tracer dye into the private sanitary plumbing system or system(s). Use care to avoid staining private property. A laundry tub, sanitary cleanout or water closet is the preferred point of introduction. (Note that if multiple systems are to be dye tested, multiple colors of non-toxic tracer dye should be used in order to facilitate tracing of the separate systems. If separate colors are not available, the systems should be tested sequentially and sufficient time allotted to allow all dye to pass prior to initiating a second test.)
- Conduct visual observations of both the sanitary and storm systems immediately downstream from the dye test location. Continue observations until dye is located.
- Use a hydrant to induce dry weather flow within the storm system. Allow sufficient time to witness any seepage into the storm sewer.

- Any evidence of tracer dye, introduced to the sanitary system, within the storm sewer system is confirmation of an illicit discharge and/or connection.
- All Dye Tests, both positive and negative, will be documented on an IDEP Dye Test Report Form

4.) Upon confirmation of an illicit discharge/connection, notify the SWPM and/or ASWPM immediately to initiate reporting procedures.

ILLICIT DISCHARGE/CONNECTION REPORTING

Illicit discharges or sanitary connections found during the IDEP investigations or reported to Center Line, personnel must, at minimum, do the following in order to comply with the permit and the law:

- Center Line will immediately notify the MDEQ's Southeast Michigan District Office at 586-753-3700. Or, if after regular business hours, by calling the MDEQ's 24-Hour Pollution Emergency Alerting System at 800-292-4706 when soil, sediment, and other pollutants such as pesticides, petroleum derivatives, construction chemicals, and solid wastes are discharged into Center Line's MS4 in a quantity that could negatively impact surface waters of the state.

- Report discharges of untreated or partially treated sewage from illicit sanitary connections to the land or into waters of the state on an annual basis as Sanitary Sewer Overflows (SSOs) related to either dry or wet weather events.
  - Indicate whether the frequency of discharge is periodic or continuous and provide an estimate of the annual volume of discharge.
  - Continue to report annually until the illicit connection is eliminated.

- In addition to being reported annually, significant illicit discharges of untreated or partially treated sewage of human origin must be reported within 24 hours after discharge begins or is discovered. Center Line shall comply with Section 324.3112a of Part 31 of Public Act 451 of 1994, including notification of the MDEQ, MCHD, and one or more daily newspapers of general circulation. (Complete and submit form EQP 5857 revision 10/01 available on the web at www.deq.state.mi.us/documents/deq-swq-csosso-eqp5857.doc)

Compliance with the reporting requirements of the permit and the law is the responsibility of the SWPM.

2.2 Prioritizing Elimination of Illicit Discharges/Connections

Elimination of confirmed illicit discharges / connections shall be prioritized by the SWPM and/or ASWPM. Priority will be established by the following criteria:

2.2.a Active Illicit Connections

A direct connection to the storm sewer system that is continuously or frequently conveying an illicit discharge. Active Illicit Connections will be further prioritized (if absolutely necessary) by the following additional criteria:

1.) Volume of illicit discharge.
2.) Relative concentration or "strength" of illicit discharge.
3.) Known water quality concerns in receiving waters as reported by the Macomb County Health Department. This will be further prioritized (if absolutely necessary) by the following additional criteria:
    a.) Pollution level of receiving County Drain.
    b.) Beneficial uses of receiving water at termination of County Drain.
    c.) Impaired or threatened water bodies.
    d.) Threatened or endangered fauna or flora.

2.2.b Active Illicit Seepage

An illicit discharge that is not the result of an illicit connection and does not represent a sustained, concentrated illicit discharge. An example of this is sanitary sewage "leaking" through soils into the storm sewer system via pipe joints and bulkheads in poor condition. Active Illicit Seepage will be further prioritized (if absolutely necessary) by the following additional criteria:

1.) Volume of illicit discharge.
2.) Relative concentration or "strength" of illicit discharge.
3.) Known water quality concerns in receiving waters as reported by the Macomb County Health Department. This will be further prioritized (if absolutely necessary) by the following additional criteria:
    a.) Pollution level of receiving County Drain.
    b.) Beneficial uses of receiving water at termination of County Drain.
    c.) Impaired or threatened water bodies.
    d.) Threatened or endangered fauna or flora.

2.3 Elimination of Illicit Discharges/Connections

The elimination of illicit discharges/connections is the primary goal of the Plan. At any time when it is discovered that soil, sediment, and other pollutants such as pesticides, petroleum derivatives, construction chemicals, and solid wastes are discharged into Center Line's MS4 in a quantity that could negatively impact surface waters of the state the Center Line employees will immediately notify the

MDEQ's Southeast Michigan District Office at 586-753-3700. Or, if after regular business hours, by calling the MDEQ's 24-Hour Pollution Emergency Alerting System (PEAS) at 800-292-4706. This notification will occur immediately unless the release is determined to be not in excess of the threshold reporting quantities in the Part 5 Rules.

2.3.a Legal Authority

From Center Line's experience, individual property owners found to be discharging illegally into the separate storm water system have voluntarily corrected the problem when economical solutions exist. However, when economical solutions do not exist, Center Line will work with the property owner to resolve the situation.

If enforcement is necessary, Center Line will utilize the Center Line Code of Ordinances (Ordinances). Chapter 74 Utilities, Article II Sewers, Section 74-29 Use of Sewers, Subsection (b) states:

> "(b) No person shall discharge any sanitary sewage, industrial waste or other objectionable or deleterious matter into any stream, watercourse, lake or pond within, leading to or bordering upon the city. Such sewage or waste shall be discharged into public sewers having connection to the sewage works, unless such sanitary sewage or other objectionable or deleterious matter is treated in a manner approved by the director of the Detroit water and sewerage department and the health department, so as not to endanger public health and as required by other government agencies having jurisdiction so as not to endanger public health or create a public nuisance.
> (Code 1962, § 5-604)"

The Ordinances also outline penalties for violations and further reference the State Plumbing Code, adopted in full.

If at any time the SWPM believes implementation of the Plan would be improved by additions and/or revisions to the Ordinances, a meeting will be scheduled with the City Manager to present said additions or revisions. If the City Manager determines the requested additions and/or revisions are warranted based upon need, the City Manager will present the proposed additions and/or revisions to the City Attorney for review. The proposed additions and/or revisions will then be presented to City Council, along with the City Attorney review, for their consideration.

If the confirmed illicit discharge/connection is directly to a county drain, or if Center Line encounters difficulty in obtaining compliance from the property owner, the MCHD will be contacted for assistance. The MCHD has authority to enforce correction of illicit connections under the

Regulations Governing onsite disposal of Sanitary Sewage and Human Excreta in Macomb County, Michigan (adopted December 21, 1989). Section 3.1 states that "it shall be unlawful for any person to discharge…human sewage…into a lake, river, stream, ditch;…" Section 3.2 allows for the Director to issue notices and require correction of discharges of improperly treated sanitary sewage. Section 4.3 provides for the right of entry of all properties, public and private, in conjunction with fulfillment of the duties and responsibilities specified in the regulations. Under Section 4.5, the Director is empowered to issue notices of violation and order corrections of any violations and Section 4.6 allows the Director to pursue judicial remedies and sanctions. Finally, Article 15 allows for penalties and injunctions under the regulations.

2.3.b Responsibility

Elimination of illicit discharges/connections that are the direct result of problems and/or failures of the Center Line public sewer systems are the responsibility of Center Line.

Responsibility for elimination of illicit discharges/connections that are the direct result of problems and/or failures of individual service connections must be evaluated and determined. Center Line maintains ownership of all service connections within the public right-of-way or rear yard utility easement. Individual property owners maintain ownership of service connections on private property.

As such, responsibility for correction of illicit discharges/connections are outlined as follows:

Cause of Illicit Discharge/Connection	Responsible for Correction
Connection to Incorrect Sewer	Property Owner
Problem/Failure on Private Property	Property Owner
Problem/Failure within ROW or Esmt	Center Line

Problems and/or failures of the public sewer system or service connections are anticipated to be the cause of most illicit discharges/connections. If an illicit discharge/connection is discovered to be the result of another unforeseen cause, it will be evaluated on an individual basis to determine responsibility. The SWPM will document the cause and determination of responsibility for future reference to establish consistency in enforcement of the Plan.

2.3.c Confirmation

Upon elimination of the illicit discharge/connection, the repair must be confirmed by an additional dye test utilizing procedures outlined Section 2.1.c. Center Line will not consider an illicit discharge/connection eliminated until the repair is confirmed by dye testing.

2.3.d Tracking

The SWPM will maintain two separate files related to confirmed illicit discharges/connections. These files will serve to track elimination of the illicit discharge/connection and aid in reporting requirements.

<u>"Red" or "Hot" File</u>

Upon confirmation of an illicit discharge/connection, a copy of all relevant information will be transferred to the "Red" or "Hot" file. This information will include applicable "IDEP General Observation" forms, "IDEP Screening" forms, Laboratory Testing Results, "Dye Test Report" forms, reporting correspondence and any notes or memorandums regarding identification, confirmation, and determination of responsibility.

<u>"Green" or "Corrected" File</u>

Upon confirmation that an illicit discharge/connection has been eliminated, all information from the "Red" or "Hot" file will be transferred to the "Green" or "Corrected" file along with the "Dye Test Report" form that confirms elimination. The SWPM will also include an "Action Memo" that documents details of the repair. Included in this "Action Memo" will be:

1.) Date(s) the repair was performed.
2.) Detail the entity performing the repair (i.e. DPW, Contractor, other).
3.) Construction methods.
4.) Construction materials.
5.) Cost of the repair if contracted by Center Line.

3.0 SEEPAGE INTO THE SEPARATE STORM WATER SYSTEM

3.1 Seepage from Sanitary Sewers

In order to minimize seepage from sanitary sewers, Center Line performs routine maintenance and inspection of sanitary sewers. Routine maintenance includes cleaning with a sewer jet and spot repairs.

Center Line cleans and televises the entire storm and sanitary sewer systems every seven (7) to ten (10) years. The most recent City-wide cleaning and televising programs were conducted of the sanitary sewer during the 2007 CCTV Investigation, the SRF CIPP and SCIPP contracts up to 2010 and the storm sewers during the SAW Grant 1412-01 CCTV and Cleaning project completed during 2018.

Center Line contracts an annual Cured-in-Place Pipe (CIPP) lining program and performs other rehabilitation efforts as needed. Approximately ten (10) of the thirty (30) miles of sanitary sewer have been rehabilitated by CIPP lining, pipe bursting, grouting, or open cut replacement.

During the summer of 2004, the Center Line DPW began a manhole survey. The DPW systematically conducted this survey throughout the City. The complete survey was completed in 2007. Center Line initiated an annual sanitary manhole rehabilitation program based upon the initial results of this survey. These manholes were previously surveyed and rehabilitated in the mid 1980's. Storm manholes and catch basins were surveyed during the SAW Grant activities.

Finally, all new or rehabilitated sewers are air tested and/or televised prior to acceptance.

With the exception of the required TMDL monitoring under the permit, Center Line does not intend to initiate any separate bacterial or chemical sampling to specifically search for seepage from sanitary sewers. The dry weather screening procedures outlined in Section 2.1.c will identify problems of this nature. Absent an illicit discharge/connection, seepage from sanitary sewers will be investigated as a potential cause.

3.2 Seepage from On-site Sewage Disposal Systems (OSDS)

Center Line is not aware of any residences that discharge sanitary waste to OSDS. Chapter 74 Utilities, Article II Sewers, Section 74-28 Sewer Connection Required, of the Ordinances states:

> "Any building or structure that is used or occupied for any purpose by any owner, occupant, tenant, lessee or person shall be connected to an available sanitary sewer."
> (Code 1962, § 5-603)

Some existing sanitary leads have been discovered to be connected to the City's sanitary sewers through former septic tanks. When discovered these connections are generally routed through the tank and the tank is demolished or abandoned in place with grout or sand fill. Should any abandoned OSDSs be located, Center Line will notify the MCHD.

The MCHD Surface Water Improvement and Monitoring (SWIM) team investigates failing septic systems on an ongoing basis based on surface water quality data and complaints. When MCHD locates a problem within Center Line, the City will work with the property owner to correct and eliminate the source of the illicit discharge.

3.3 Finding and Eliminating the Source

Description: In order to perform outfall surveys City staff attend IDEP training when offered in the watershed. The City will follow-up on drains placed on the priority list. First, the City identified the ownership of the drains within the City. Drains are under the jurisdiction of the Macomb County Office of Public Works Office (MCOPW), the Macomb County Department of Roads (MCDR), Michigan Department of Transportation (MDOT), neighboring communities, or the City of

Center Line. If a drain outside the jurisdiction of the City is suspected to be improperly discharging into a storm drain, the City will notify the appropriate jurisdiction in writing within 30 days of the discovery of the suspected discharge including any pertinent information pertaining to the suspected discharge.

The City of Center Line will follow-up on suspicious discharges that are found to be exiting their drainage system. The follow up investigations will consist of first narrowing down the location of the source of the illicit discharge by sampling various manholes along the drain. Once a section of the drain has been targeted, advanced investigation techniques will then be employed. Advanced investigation techniques may include televising the target section of the sewer, using automatic samplers for discharges that are intermittent or flow dependent, smoke testing storm sewers, and dye testing homes or facilities to verify a suspected illicit connection or discharge. The appropriate approval will be obtained from the MDEQ in the event tracer dyes are used for sewer investigations.

The City of Center Line will track the status of each suspicious discharge that has been identified. Tracking will consist of a dated log of activities that have been performed to locate the source(s) of the problem. Once a source has been identified, the property owner will be notified within (48) Hours of discovery.

The City's goal is to have each illicit connection or illegal spill/dumping corrected within ninety (90) days of notification to the property owner, if a sanitary sewer is readily available and the cost for correction is not prohibitive for the property owner. However, if more complicated solutions are required, the City will set up a schedule for correction with each individual property owner. After the ninety (90) days of notification, or approved target date, the City will recheck and possibly dye test the outfall to ensure that the corrections have been made.

4.0 IDEP EVALUATION

4.1 Tracking

For the purpose of Plan evaluation, Center Line will track the following information:

1.) Number of City employees trained,
2.) Number of illicit discharges / connections identified
3.) Number of illicit discharges / connections eliminated.

This information will be submitted with Center Line's annual report. If possible, the estimated pollutant reduction will be determined and reported annually.

4.2 Goals

A preliminary schedule has been developed for implementing the Plan. This schedule is included in the Appendix F. Additionally, as the Plan continues to be implemented Center Line has established the following initial goals:

1.) 100% of DPW Employees, City Building Inspector and City Engineers issued the Plan and acknowledge understanding.
2.) A minimum of one (1) additional training session per permit cycle for DPW employees and within first year for new employees.
3.) Dry weather screening at a minimum of 20% of the City's identified points of discharge locations per year.
4.) 100% compliance with reporting requirements.
5.) Implementation and 100% compliance with reporting forms outlined in the Plan.
6.) Elimination of any identified illicit connections or significant illicit discharge within ninety (90) days.
7.) Elimination of any other illicit discharge within six (6) months.

4.3 Evaluation

As means for evaluating the effectiveness of the Plan, each primary goal must be evaluated individually. Points to evaluate listed for each goal.

1.) 100% of DPW Employees, City Building Inspector and City Engineers issued the Plan and acknowledge understanding.

- Did targeted personnel receive the Plan and acknowledge understanding?
- If not, why.
- Did performance of personnel demonstrate an understanding of the Plan?
- Have additional personnel been identified that would benefit from an understanding of the Plan?
- Is it necessary to educate outside agencies, developers or contractors regarding the Plan?

2.) A minimum of one (1) additional training session per year for new DPW employees.

- Was the targeted number of training sessions achieved?
- If not, why?
- Was the training topic appropriate?
- Did performance of personnel demonstrate the effectiveness of the training?
- Can the training be improved based upon performance?
- Would Plan effectiveness benefit from additional training?

- Does available time and personnel make additional training feasible?
- Have additional personnel been identified that would benefit from additional training sessions?

3.) *Dry weather screening at a minimum percentage of locations per year.*

- Was dry weather screening performed at the minimum number of locations?
- If not, why?
- Does available time and personnel make increasing the number of locations feasible?
- Do the procedures need to be modified based upon performance?
- Do the procedures need to be modified based upon results?

4.) *100% compliance with reporting requirements.*

- Were reporting requirements complied with?
- If not, why?
- Are additional personnel required to meet reporting requirements?
- Is information being properly reported internally?

5.) *Implementation and 100% compliance with reporting forms outlined in the Plan.*

- Was implementation and use of the reporting forms achieved?
- If not, why?
- Do the forms include information that is not useful?
- Do the forms require additional information that would be useful?
- Are the forms being submitted to the proper personnel, internally?
- Have field performance identified any additional reporting forms that would be beneficial?.

6.) *Elimination of any identified illicit connections or significant illicit discharge within ninety (90) days.*

- Was the ninety (90) day goal achieved?
- If not, why?
- When Center Line is responsible for elimination, is it feasible to eliminate more expeditiously?
- Does the ninety (90) day goal impact the cost for elimination, positively or negatively?

7.) *Elimination of any other illicit discharge within six (6) months.*

- Was the six (6) month goal achieved?

- If not, why?
- When Center Line is responsible for elimination, is it feasible to eliminate more expeditiously?
- Does the six (6) month goal impact the cost for elimination, positively or negatively?

The goals and Plan will be evaluated annually at the time of the annual report. The SWPM will determine if the Plan requires modification based upon results of the evaluation.

5.0 MAPPING

Center Line will continually update the outfall map with newly constructed, identified or eliminated point sources. This will be submitted with Center Line's biennial report.
The existing Points of Discharge mapping and tabulated data as "Table-1" are provided in Appendix A – Maps and Tables of the SWMP.

6.0 TMDL MONITORING

Each City owned MS4 facilities' discharge points will be used for the required Wet Weather monitoring. Wet Weather samples will be collected after at least 0.25 inch of rain has fallen in the previous 24 hours, at least two wet weather screenings will be performed during the permit cycle. These will be conducted during the second and fourth years of the five year cycle.

Table-1A in Appendix A lists each facility and their discharge points. Facilities have multiple discharge points and due to drainage area characteristic are assumed to have substantially identical storm water discharge, therefore wet weather monitoring will conduct only one discharge point per facility. In addition to the City-owned facilities an additional point of discharge to otherwise characterize each of the City's storm sewer system ten (10) base maps has been identified within the same table and on the base maps.

The referenced facility maps showing the discharge points and TMDL monitoring points are provided in "Appendix A – Maps and Tables".

The results of any compliance related sampling will be assessed and summarized in the required biennial progress reports or at least twice during the permit cycle. Based on a review of the sampling results, Implementation of new BMP's will be reviewed and/or existing BMPs will be updated or revised to ensure progress toward achieving TMDL pollutant load reductions.

Engineering plan reviews and inspection of proposed new construction will aid in the prevention of new sources or illicit connections. City will conduct dye or smoke testing to identify illicit connections if determined to be necessary. City of

Center Line IDEP follow up and permit required implementation of pollution prevention and good housekeeping (P2/GH) standards are exercised at affected City facilities. The actions and records of each activity will be documented and tracked as performed and submitted in the biennial progress report (Note: quarterly review of documentation and tracking is currently being implemented).

IDEP/TMDL AND PHASE II

OUTFALL SCREENING FORM

Section 1: Background Data

Subwatershed:	Outfall ID:	☐Actual ☐Tributary To
Drain Name:	Drain #:	School Name:
Today's Date:	Time (Military):	Structure #:
Temperature: °F	Rainfall (in.) Last 24 hours:	Last 48 hours:
Inspectors:	Project:	
Latitude:	Longitude:	GPS Unit:
Camera:	Photo #'s:	

Land Use in Drainage Area (Check all that apply):

☐Commercial ☐Institutional ☐High Density ☐Park Known Industries:

☐Industrial ☐Residential ☐Rural ☐Other:

Notes (e.g., origin of outfall, cross streets, addresses, structure numbers, landmarks):

Downstream Inspection and Sample: (Y/N)

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS	SUBMERGED
☐Closed Pipe	☐Concrete ☐Ductile ☐Clay ☐CMP ☐PVC ☐HDPE ☐Other:	☐Circular ☐Single ☐Elliptical ☐Double ☐Box ☐Triple ☐Other:	Diameter or Other:	Water Sediment ☐No ☐No ☐Partially ☐Partially ☐Fully ☐Fully
☐Open Drainage	☐Concrete ☐Other: ☐Earthen ☐Rip-Rap	☐Trapezoid ☐Parabolic ☐Other:	Depth: Top Width: Bottom Width:	

Flow Present? ☐No ☐Yes *If No, Skip Section 4 & 5*

Flow Description: ☐Trickle ☐Moderate ☐Substantial

Section 3: Notes, Sketches (Include Non-IDEP Concerns such as Trash Dumping, Structural Damage, etc.)

Section 4: Physical Indicators for Flowing Outfalls Only

INDICATOR	CHECK (if present)	DESCRIPTION	RELATIVE SEVERITY INDEX		
Odor	☐	☐Sewage ☐Rancid/sour ☐Petroleum/gas ☐Sulfide ☐Other:	☐ 1 – Faint	☐ 2 – Easily detected	☐ 3 – Noticeable from a distance
Color	☐	☐Clear ☐Brown ☐Gray ☐Green ☐Orange ☐Red ☐Yellow ☐Other:	☐ 1 – Faint colors in sample bottle	☐ 2 – Clearly visible in sample	☐ 3 – Clearly visible in outfall flow
Turbidity	☐	See Severity	☐ 1 – Slight cloudiness	☐ 2 – Cloudy	☐ 3 – Opaque
Floatables – Not Trash	☐	☐Sewage (Toilet paper, etc.) ☐Suds ☐Petroleum (oil sheen) ☐Other:	☐ 1 – Few/Slight; origin not obvious	☐ 2 – Some; indications of origin (ex. possible suds or oil sheen)	☐ 3 – Some; origin clear (ex. obvious suds, oil sheen, or floating sanitary materials

Section 5: Field Screening

Temperature:	Conductivity:	Ammonia:
Surfactants:	pH:	Fluoride:

Section 6: Physical Indicators for Both Flowing and Non-Flowing Outfalls

Are physical indicators that are not related to flow present? ☐ Yes ☐ No *(If No, Skip to Section 7)*

INDICATOR	CHECK (if present)	DESCRIPTION	COMMENTS
Outfall Damage	☐	☐Spalling/Cracking/Chipping ☐Peeling Paint ☐Corrosion	
Deposits/Stains	☐	☐Oily ☐Flow Line ☐Paint ☐Other:	
Abnormal Vegetation	☐	☐Excessive ☐Inhibited	
Poor Pool Quality	☐	☐Odors ☐Colors ☐Floatables ☐Excessive Algae ☐Suds ☐Oil Sheen ☐Other:	
Pipe Benthic Growth	☐	☐Brown ☐Orange ☐Green ☐Other:	

Section 7: Overall Outfall Characterization

☐Unlikely ☐Potential (two or more indicators) ☐Suspect (one or more indicators with a severity of 3) ☐Obvious

Section 8: Data Collection

1. Sample For The Lab?	☐Yes ☐No	If Yes, Type:	☐*E. coli* ☐Other
2. If Yes, Collected From?	☐Flow ☐Pool	Sample ID #'s:	
3. Intermittent Flow Trap Set?	☐Yes ☐No	If Yes, Type:	☐OBM ☐Caulk Dam

PAGE 3. ADDITIONAL NOTES/SKETCH:

City of Center Line

Storm Water Management Program (SWMP)

Appendix D

Policy, Ordinances and Regulations

Revised May 24, 2019

1. Policy S1 - Public Participation Procedure
2. Policy S2 - Enforcement Response Procedure
3. Policy S3 - Construction Site Runoff Control Procedure
4. Policy S4 - Public Education Plan
5. Existing Center Line Ordinance Sections
6. Draft “Appendix C.1 Storm Water Standards Ordinance”

City of Center Line **POLICY #: S1**

MUNICIPAL SEPARATE STORM SEWER SYSTEM PUBLIC PARTICIPATION INVOLVEMENT PROGRAM POLICY

I. POLICY:

This policy is to establish procedures for City of Center Line Public Participation/Involvement Program (PPP)

II. BACKGROUND:

The MDEQ NPDES Phase II Stormwater Discharge Permit Application requires a procedure for public participation/involvement program as identified in the Application. This procedure includes a description of the opportunities for the public to provide comment on the Storm Water Management Plan and inviting public involvement and participation in the implementation and period review of the Storm Water Management Plan.

III. PROCEDURE:

Storm Water Management Plan Available for Public Inspection and Comment

The storm water management plan (SWMP) will be posted on City of Center Line web site for review and comment by the public, once the SWMP is approved by MDEGLE. This information will include the contact information of the storm water manager to forward comments. The storm water manager will compile and track comments from the public including: commenter name, date, and comment.

Public Involvement and Participation in the Implementation and Periodic Review of the Storm Water Management Plan

The following BMPs will be utilized to allow for public involvement and participation in the implementation and periodic review of the Storm Water Management Plan.

BMP	Description	Schedule	Method of Assessment
Web Site	The web site will be utilized to explain the program and opportunities for public involvement and participation.	Ongoing	Number of hits on community web site.
Community Newsletter	The newsletter is circulated to residents and will include information on the SWMP.	Twice during permit cycle	Number of residents receiving newsletter
Public Participation Survey	This effort is in partnership with regional efforts for stakeholders to provide input into the priorities and implementation of storm water planning.	Ongoing	Survey results

IV. OTHER:

Any questions on this policy and procedure should be directed to the Storm Water Manager.

V. PROCESS FOR UPDATING/REVISING THIS PROCEDURE

This procedure shall be reviewed on an annual basis by the Stormwater Manager for any updates to streamline the requirements.

City of Center Line	POLICY #: S2
MUNICIPAL SEPARATE STORM SEWER SYSTEM ENFORCEMENT RESPONSE PROCEDURE	

I. POLICY:

This policy is to establish the City of Center Line Enforcement Response Procedure.

II. BACKGROUND:

The MDEQ NPDES Phase II Stormwater Discharge Permit Application requires a procedure for Enforcement Response to address violations of the ordinances or regulatory mechanism identified in the Storm Water Management Plan.

III. PROCEDURE:

Each ordinance/regulatory mechanism within this jurisdiction includes an enforcement response to violations of the ordinance. The ordinances referenced in this application include:

- Center Line Code of Ordinances Chapter 1 General Provisions, Section 1-13 General Penalty
- Center Line Code of Ordinances Chapter 1 General Provisions, Section 1-15 Appearance Tickets
- Center Line Code of Ordinances Chapter 2 Administration, Section 2-161 Ordinance Enforcement Officer
- Center Line Code of Ordinances Chapter 34 Environment, Section 34-32 Privies, Vaults, etc.
- Center Line Code of Ordinances Chapter 50 Parks and Recreation, Section 50-4. (3) Prohibited uses and acts, Dogs, other animals.
- Center Line Code of Ordinances Chapter 74 Utilities, Section 74-29 (b) Use of Sewers

In addition to the enforcement mechanisms noted in ordinance, additional tracking of instances of noncompliance occurs and includes the following information:

- Name
- Date
- Location of Violation (address, cross streets, etc.,)
- Business/Agency/Organization (as appropriate)
- Description of Violation
- Description of Enforcement Response
- Schedule for Returning to Compliance
- Date Violation was Resolved.

The following is a description of the procedures the City will utilize in response to violations of the ordinances and regulations in place.

Violation Reporting:

1. Ordinance Enforcement Officer, DPW or other City employee notices violation during daily duties or on routine inspection
2. Resident contacts City and files a complaint
3. MCHD receives complaint from resident

Procedure Once Violation is Reported:

1. An appearance ticket is issued to the responsible party,

2. An appearance ticket, as used above, means a complaint or written notice issued and subscribed by a public safety officer or other officer, employee or individual employed by or in the service of the city,
3. Complete complaint or Violation Report and notify MCHD and/or MDEQ immediately in the case of an illicit connection to a storm sewer or county drain or spill, release or illicit discharge of noxious substance.
4. MCHD completes testing; notifies City about area of concern
5. Notify property owner/violator(s) in writing of violation immediately; document all correspondence with resident
6. Responsible party has 90 days to contact DPW to arrange and complete correction process
7. If no correction is made, MCHD Director is notified and may take legal action against the resident per Section 4.5-4.7 of the Regulations Governing Onsite Disposal of Sanitary Sewage and Human Excreta in Macomb County. Record the information in the table presented on the following pages

IV. OTHER:

Any questions on this policy and procedure should be directed to the Storm Water Manager.

V. PROCESS FOR UPDATING/REVISING THIS PROCEDURE

This procedure shall be reviewed on an annual basis by the Stormwater Manager for any updates to streamline the requirements.

I. POLICY:

This policy is to establish the City of Center Line procedures for construction site runoff control until superseded by the Storm Water Standards Ordinance.

II. BACKGROUND:

The MDEQ NPDES Phase II Stormwater Discharge Permit Application requires a procedures for construction site runoff control that includes notification procedures and ensuring proper permits are obtained by those disturbing greater than one acre of soil within the jurisdiction.

III. PROCEDURE:

City of Center Line will track the receipt of complaints submitted by the public or noted by staff during regular course of business of soil, sediment, or other pollutants such as pesticides, petroleum derivatives, construction chemicals, and solid wastes are being discharged into the City of Center Line MS4. The tracking will include:

- Name of person providing the complaint
- Location (address or nearest cross street)
- Description of follow up (e.g., date referred to the Part 91 enforcing agency).

Center Line will notify the MDEQ's Southeast Michigan District Office at 586-753-3700. Or, if after regular business hours, by calling the MDEQ's 24-Hour Pollution Emergency Alerting System at 800-292-4706 when soil, sediment, and other pollutants such as pesticides, petroleum derivatives, construction chemicals, and solid wastes are discharged into Center Line's MS4 in a quantity that could negatively impact surface waters of the state.

{FOR NON-PART 91 AGENCIES}

Center Line will notify the Part 91 Agency, Macomb County Public Works Office, when soil or sediment are discharged into Center Line's MS4 in a quantity that could negatively impact surface waters of the state.

Center Line ensures that construction activity one acre of greater in total earth disturbance with the potential to discharge to the MS4 does obtain a Part 91 Permit and State of Michigan Permit by Rule or is conducted by an approved Authorized Public Agency through the site plan review process.

IV. OTHER:

Any questions on this policy and procedure should be directed to the Storm Water Manager.

V. PROCESS FOR UPDATING/REVISING THIS PROCEDURE

This procedure shall be reviewed on an annual basis by the Stormwater Manager for any updates to streamline the requirements.

I. POLICY:

This policy is to establish procedures for evaluating and determining the effectiveness of City of Center Line Public Education Plan (PEP).

II. BACKGROUND:

The MDEQ NPDES Phase II Stormwater Discharge Permit Application requires a procedure for evaluating the effectiveness of the public education program as identified in the Application. This procedure includes a method for addressing changes in public awareness and behavior resulting from the implementation of the PEP and the process for modifying the PEP to address ineffective implementation (Stormwater Permit Application #6).

III. PARTNERSHIPS:

In implementing this PEP, Center Line will pursue cooperative partnerships, plus information and resource sharing, with several organizations, including: Macomb County Office of Public Works, Macomb County Health Department, Macomb County Department of Roads, Michigan Department of Environmental Quality, Southeast Michigan Council of Governments and the Red Run (R2W) Watershed Advisory Group. The City maintains an active Government Membership with the Clinton River Watershed Council (CRWC).

IV. PROCEDURES:

City of Center Line public education program will be incorporated into each subsequent biennial report submitted. Each BMP will be implemented per the Community Specific Activities in Table 2 of the Clinton River Watershed- Lake St. Clair Direct Drainage Collaborative Public Education Plan (CRW-LSCDD PEP) Implementation and evaluation of each task is included in Appendix F, Table 3 – Action Plan of the City's Storm Water Management Plan (SWMP) for achieving the goals set by this application. If the goal is met, a review will be made to determine if the goal can be adjusted higher for the following years or if the action is at its feasible maximum. If the goal is not met, further review will be made to determine what factors lead to the failure and what changes may be made in order to correct the failure. All changes made to the public education program will be outlined in each annual report.

V. OTHER:

Any questions on this policy and procedure should be directed to the Storm Water Program Manager.

VI. PROCESS FOR UPDATING/REVISING THIS PROCEDURE

This procedure shall be reviewed on an annual basis by the City or designated agent for any updates to streamline the requirements.

- **Sec. 1-13. - General penalty.**

(a) Unless another penalty is expressly provided by this Code for any particular provision or section, every person convicted of a violation of any provision of this Code, or any rule, regulation or order adopted or issued in pursuance thereof, shall be punished by a fine of not more than $500.00 and costs of prosecution, or by imprisonment for not more than 90 days, or by both such fine and imprisonment in the discretion of the court. Each act of violation and every day upon which any such violation shall occur shall constitute a separate offense.

(b) The penalty provided by this section, unless another penalty is expressly provided, shall apply to the amendment of any section of this Code whether or not such penalty is reenacted in the amendatory ordinance.

(c) The penalty shall be in addition to the abatement of the violating condition, any injunctive relief, or revocation of any permit or license.

State Law reference— Limitation on penalties, MCL 117.4i, MSA 5.2082.

- **Sec. 1-14. - Changes in fees and charges.**

All fees and charges in this Code, except those set by state or federal law, may be changed by resolution or ordinance adopted by the city council. Such legislation shall be on file in the office of the city manager.

- **Sec. 1-15. - Appearance tickets.**

(a) Officers, employees and other individuals employed by and in the service of the city who are authorized by state law and/or the provisions of the ordinances of the city to enforce the provisions of such ordinances, including but not limited to the director of public safety, building inspector, health officer, fire marshal, and their assistants, are hereby specifically authorized in accordance with state law, including MCL 764.9 et seq., MSA 28.868 et seq., to issue and serve upon a person an appearance ticket if the officer, employee or other individual employed by or in the service of the city has reasonable cause to believe that the person has committed a violation of the provisions of the ordinances of the city or state law, except where the issuance of such an appearance ticket is expressly prohibited by the provisions of the ordinances or applicable state law.

(b) An appearance ticket, as used above, means a complaint or written notice issued and subscribed by a public safety officer or other officer, employee or individual employed by or in the service of the city who is by law or ordinance authorized to issue it, directing a designated person to appear in the designated local criminal court at a designated future time in connection with his/her alleged commission of a designated violation of state law or local ordinance for which the maximum permissible penalty does not exceed 90 days in jail and/or a fine of $500.00. The appearance ticket shall be numbered consecutively, be in such form as determined by the attorney general, the state court administrator and the director of the department of state police and shall consist of the following parts:

(1) The original, which shall be a complaint or notice to appear by the officer, employee or other individual filed with the court.

(2) The first copy, which shall be an abstract of court records.

(3) The second copy, which shall be retained by the appropriate local enforcement agency.

(4)The third copy, which shall be delivered to the alleged violator. With the prior approval of such state officials, the appearance ticket may be appropriately modified as to content or number of copies to accommodate the law enforcement agency and local court procedures and practices.

- **DIVISION 4. - ORDINANCE ENFORCEMENT OFFICER**
-
- **Sec. 2-161. - Ordinance enforcement officer.**

The office of city ordinance enforcement officer is hereby established.

(Ord. No. 388, § 1, 3-4-2013)

- **Sec. 2-162. - Hiring and removal.**

The city manager is hereby authorized to hire any one or more persons to the office of ordinance enforcement officer for such term or terms and for such compensation as the city manager may determine. The city manager may further remove any person from said office, in the discretion of the city manager.

(Ord. No. 388, § 2, 3-4-2013)

- **Sec. 2-163. - Authority.**

The ordinance enforcement officer is hereby authorized to enforce all ordinances of the city, whether heretofore or hereafter enacted, and whether such ordinances specifically designate a different enforcing official or do not designate any particular enforcing officer. The authority granted herein to the ordinance enforcement officer shall not be exclusive, but shall be supplemental to the enforcement authority granted to any other specific office, officer or individual by any particular ordinance or statute, whose authority shall continue in full force and effect.

(Ord. No. 388, § 3, 3-4-2013)

- **Sec. 2-164. - Duties.**

The duties of the ordinance enforcement officer shall include, but shall not be limited to, the following: investigating suspected ordinance violations; issuing and serving notices of ordinance violations; issuing and serving appearance tickets as authorized under 1968 Public Act 147, as amended (MCL 764.9c); issuing and serving municipal ordinance violation notices and municipal civil infraction citations as authorized under 1994 Public Act 12, as it may from time to time be amended (MCL 600.8701, et. seq.); appearing in court or other judicial or quasi-judicial proceedings to assist in the prosecution of ordinance violators; and such other ordinance enforcing duties as may be delegated by the city council.

(Ord. No. 388, § 4, 3-4-2013)

Chapter 32 - ENVIRONMENT

- **Sec. 34-32. - Privies, vaults, etc.**

No person shall construct or cause to be constructed a privy, outhouse, cesspool or privy vault within the city if there is a public sewer within 150 feet of the privy, outhouse, cesspool or privy vault. Nothing herein contained shall prevent the construction of privies distant more than 150 feet from a public sewer.

(Code 1962, § 7-111)

Chapter 50 – PARKS AND RECREATION

- **Sec. 50-4. - Prohibited uses and acts.**

No person in any park owned or operated by the city shall:

(3) *Dogs, other animals.* No person shall bring into any city park any dog, cat, pet or other animal owned by such person, or over which such person has or exercises any right, custody, possession, dominion, care or control, nor shall any person permit, cause or allow any such dog, cat, pet or animal to be brought into any city park.
(Code 1962, § 5-704)

Chapter 74 - UTILITIES

FOOTNOTE(S):

--- (**1**) ---

Cross reference— Buildings and building regulations, ch. 14; community development, ch. 22; streets, sidewalks and other public places, ch. 62; subdivisions, ch. 66. (Back)

ARTICLE I. - IN GENERAL

Secs. 74-1—74-25. - Reserved.

ARTICLE II. - SEWERS

Sec. 74-26. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

BOD (denoting biochemical oxygen demand) means the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five days at 20 degrees Celsius, expressed in milligrams per liter (mg/l).

Building drains means that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste and other drainage pipes inside the walls of the building and conveys it to the building sewer, beginning five feet outside the inner face of the building wall.

Building sewer means the extension from the building drain to the public sewer.

Combined sewer means a sewer receiving both surface runoff and sewage.

Director means the director of the department of public works in the city or his deputy or his designated representative.

Industrial wastes means any liquid, solid or gaseous waste or form of energy or combination thereof resulting from any process of industry, manufacturing, business, trade or research, including the development, recovery or processing of natural resources.

National Pollutant Discharge Elimination System (NPDES) permit means the same as defined in the Federal Water Pollution Contract Act, 33 USC 1342, PL-92-500, section 402; and 40 CFR 125.

Natural outlet means any outlet into a watercourse, river, pond, ditch, lake or other body of surface water or groundwater.

Person or *user* means any individual, firm, company, association, society, corporation or group.

Private drain means any drain or sewer connecting a private source to a public or lateral sewer.

Private sewer means a sewer not under the jurisdiction or ownership of a governmental entity.

Public right-of-way means a street or alley under governmental jurisdiction that is for public use.

Public sewer means a common sewer controlled by a governmental agency or public entity.

Sanitary sewer means a sewer that carries liquid or water-carried wastes from residences, commercial buildings, industrial plants, and institutions, together with minor quantities of groundwaters, stormwaters and surface waters that are not admitted intentionally.

Sewage means a combination of the water-carried wastes from residences, business buildings, institutions and industrial establishments, together with such groundwaters, surface waters and stormwaters as may be present.

Sewage works means all facilities for collecting, pumping, treating and disposing of sewage.

Sewer means a pipe or conduit carrying liquid and/or liquid-bearing wastes.

Slug means any discharge of water, sewage or industrial waste which, in concentration of any given constituent or in quantity of flow, exceeds, for any period of duration longer than 15 minutes, more than five times the average 24-hour concentration or flows during normal operation.

Storm sewer means a sewer which carries stormwaters and surface waters and drainage, but excludes wastewater and industrial waters, other than unpolluted and cooling water.

Unpolluted water means water in its original natural or unused state; and, if used, it shall be at least equal chemically, physically and biologically to its state before use.

Wastewater means a combination of water, liquid and liquid- or water-carried waters emanating from or by domestic, commercial or manufacturing establishments into a sanitary sewer.

Watercourse means a channel in which a flow of water occurs, either continuously or intermittently.

(Code 1962, § 5-602)

Cross reference— Definitions and rules of construction generally, § 1-2.

Sec. 74-27. - Purpose.

By virtue of obligations and authority placed upon the city by certain contracts for sanitary sewage treatment between this city and the City of Detroit, this article is adopted to regulate the use, design and construction of public sanitary sewers in this city in which is deposited any wastewater which is treated at a wastewater treatment plant under the jurisdiction of the City of Detroit.

(Code 1962, § 5-601)

Sec. 74-28. - Sewer connection required.

Any building or structure that is used or occupied for any purpose by any owner, occupant, tenant, lessee or person shall be connected to an available sanitary sewer. All such connections, and the design, construction and installation of such sanitary sewers, shall comply with the requirements of the plumbing code of the city or the requirements of the Rules and Regulations Applying to Sewer Permit Work, The Design, Detailing and Construction Standards for Sanitary Sewers Connecting to Detroit Required System, and Guidelines for Sewer System Design, Detailing and Construction in the City of Detroit, which requirements are hereby adopted by reference, whichever is stricter in the opinion of the building director.

(Code 1962, § 5-603)

Sec. 74-29. - Use of sewers.

(a) No person shall place or cause to be placed in any sanitary sewer any substance other than household waste or commercial waste. The terms "household waste" and "commercial waste," for the purposes of this article, shall mean only liquid waste, except surface water and stormwater drainage. No person shall place or cause to be placed any device anywhere which allows any surface water or stormwater from any roof, yard or premises to be deposited in any sanitary sewer, unless approved by the board of zoning appeals.

(b) No person shall discharge any sanitary sewage, industrial waste or other objectionable or deleterious matter into any stream, watercourse, lake or pond within, leading to or bordering upon the city. Such sewage or waste shall be discharged into public sewers having connection to the sewage works, unless such sanitary sewage or other objectionable or deleterious matter is treated in a manner approved by the director of the Detroit water and sewerage department and the health department, so as not to endanger public health and as required by other government agencies having jurisdiction so as not to endanger public health or to create a public nuisance.

(Code 1962, § 5-604)

Sec. 74-30. - Permit required.

No person shall establish or make any connection with any city sewer or sewer pipe, or cause same to be done, unless he complies with the provisions of this Code, the state laws, and all lawful regulations, and unless he first procures a permit as provided herein.

(Code 1962, § 5-605)

(Ord. No. 375, 1-8-07)

Appendix A – Zoning

Article VIII – General Provisions

- **Sec. 820. - Stormwater management.**

Compliance with the storm water management system criteria of this chapter is required for any form of construction or removal or disturbance of any natural features that requires approval under Section 805 of this Code for any site plan, final preliminary plat, or PUD site plan, but is not required for issuance of grading permits that do not require site plan, final preliminary plat, or PUD site plan approval. Administrative amendments to approved site plans or administrative amendments to approved PUD site plans, as described in Article V, PD Planned Development District, that do not increase the total impervious area of the site and are not within the jurisdiction of the Macomb County Drain Commissioner shall be exempt from the storm water management system requirements of this Section

(1)

For sites within the jurisdiction of the Macomb County Drain Commissioner; or sites with storm water management systems under multiple ownership or for multiple parcels, including but not limited to site condominiums; or residential developments containing greater than 4 units within 2 or more detached structures; or sites with storm water management systems serving more than 1 parcel; the storm water management system shall be reviewed and receive preliminary plan approval from the Macomb County Drain Commissioner's Office prior to site plan, final preliminary plat, or PUD site plan approval by the city. For sites that require review by the Macomb County Drain Commissioner's Office, a permit or letter of final plan approval from the Macomb County Drain Commissioner's Office shall be obtained prior to issuance of a grading permit by the City Code Official. Any exceptions to the Rules of the WCWRC listed in this chapter are not applicable to reviews performed by the Macomb County Drain Commissioner's Office.

(2)

For sites other than described in sub-section (1) that contain or are proposed to contain more than 5,000 square feet of impervious surface, on-site storm water management systems shall be required for any site

which is the subject of a site plan, final preliminary plat, or PUD site plan. The storm water management system shall be reviewed and receive approval from the Public Services Area Administrator and meet the design criteria stated in the Rules of the WCWRC, with the following exceptions:

(a)

For sites that contain existing impervious surfaces, adding or removing and replacing impervious surfaces solely for the purpose of compliance with the Americans with Disabilities Act, or compliance with the State of Michigan Barrier Free Design Rules (Public Act 1 of 1966, as amended) shall be exempt from the storm water management system requirements of this chapter.

(b)

Sites proposed to contain:

(i)

Impervious surfaces greater than 5,000 square feet and less than 10,000 square feet require retention/infiltration only of the first flush storm events.

(ii)

Impervious surfaces equal to or greater than 10,000 square feet and less than 15,000 square feet require retention/infiltration only of the first flush and detention only of bankfull storm events.

(iii)

Impervious surfaces equal to or greater than 15,000 square feet require retention/infiltration of the first flush, and detention of bankfull, and 100-year storm event. Detention facilities designed for the 100-year storm event shall include a sediment forebay.

(c)

Public sidewalks are not required to be included in the storm water management calculations.

(d)

If the site is located in an historic district designated by the City of Center Line, then the roof area of the historic building(s) is not required to be included in the storm water management calculations. This exemption does not apply to noncontributing structures within the historic district.

(3)

On a site that requires the installation of storm water management system the detention facility shall be installed and stabilized prior to the issuance of building permits. The Public Services Area Administrator may deem it necessary to modify the timing of installation of the detention facility when conditions, such as a detention facility that is integral to the structure of a new building, prevent installation prior to building permits. As-built verification from an architect or professional engineer shall be submitted to the Code Official for approval prior to issuance of any certificate of occupancy. The as-built verification shall include: elevations and volumes, outlet sizes and elevations, stabilization information, and signature and seal of an architect or professional engineer. A sample form may be provided by the Code Official upon request.

(4)

Existing wetlands shall not be modified for the purposes of storm water management systems. Where modifications to wetland areas are allowed, the existing storage shall be maintained and shall not count toward meeting the requirements of this section.

(5)

When residential lots or units are proposed to be created, the runoff coefficients shall take into account the future impervious surfaces of these building sites within the storm water management calculations.

(6)

Storm water management facilities shall be designed so that any discharge of storm water from the facility, which does not empty directly into a drain, shall be converted to sheet flow over the ground through the use of an energy dissipater, in a manner which will preclude erosion, or other approved method as determined by the Public Services Area Administrator.

(Ord. No. 404, 10-20-2016)

- **ARTICLE XVIII. - ENFORCEMENT, PENALTIES AND OTHER REMEDIES**
- **Sec. 1800. - Violations.**

Any person, firm, or corporation violating any of the provisions of this ordinance shall be guilty of a misdemeanor and upon conviction thereof, shall be fined not less than $25.00 nor more than $500.00 for each conviction, or shall be punished by imprisonment for a period not to exceed 90 days for each offense, or by both such fine and imprisonment in the discretion of the court, together with the costs of such prosecution.

(Ord. No. 404, 10-20-2016)

APPENDIX C.1 – STORM WATER STANDARDS ORDINANCE

TITLE

An Ordinance to Regulate and Control All Storm water Runoff for New Land Development or Re-Development and the regulation of non-storm water discharges to the storm drainage system Within the City of Center Line (City) and to Promote the Safety, Public Health, and General Welfare of Residents of the City; to Provide Minimum Requirements for Storm Water Management, to Establish Standards for Engineering as they Pertain to Storm Water Management including regulating the contribution of pollutants to the City's municipal separate storm sewer system (MS4) through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law.

In order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process, the objectives of this ordinance are:

(1) To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any user,

(2) To prohibit Illicit Connections and Discharges to the municipal separate storm sewer system,

(3) To establish legal authority to Regulate and Control All Storm water Runoff for New Land Development or Re-Development Within the City,

(4) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this ordinance

(Ord. No. ___, § _, _-_-__)

PREAMBLE

This Ordinance is adopted pursuant to, and in accordance with, Act 182, Michigan Public Acts of 1991; and Act 207 of Michigan Public Acts of 1993 as amended; and Act 288, Michigan Public Acts of 1967 as amended; and Act 591 of Michigan Public Acts of 1996 as amended.

(Ord. No. ___, § _, _-_-__)

ENACTING CLAUSE

The City of Center Line Ordains:

(Ord. No. ___, § _, _-_-__)

ARTICLE I. – SHORT TITLE

Sec. 100. – [Short Title.]

This ordinance shall be known and cited as the "Storm Water Standards Ordinance"

ARTICLE II. – SCOPE

PREAMBLE

This ordinance applies to all land development causing or requiring the reshaping, grading or regrading, paving, or installation of underground utilities.

Site storm water runoff management apply to all land within the city. This ordinance shall not apply retroactively to the development of land (except that any redevelopment or new construction shall comply with the applicable provision of this ordinance) including;

1. Subdivisions or developments completed prior to the effective date hereto.
2. A single parcel, or a single lot in a subdivision recorded prior to the effective date of this ordinance, intended for only one or two family dwelling unit.

This ordinance does not repeal, abrogate, annul, or in any way impair or interfere with existing provisions of other laws, ordinances or regulations, except as hereinafter provided. Where this ordinance imposes a greater restriction or more demanding requirement upon land that is imposed or required by other ordinances in the City, the provision of this ordinance shall control.

(Ord. No. ___, § _, _-_-__)

Sec. 200. – Administration.

This ordinance shall be administered by the City Manager or the manager's designee.

(Ord. No. ___, § _, _-_-__)

Sec. 201. – Rules of Construction

For the purpose of this ordinance the following rules of construction apply.

A. Words used in the present tense include the future tense; and in the singular, include the plural, and in the masculine gender, include the feminine gender, unless the context clearly indicates the contrary.
B. The term "shall" is mandatory; the term "may" is permissive.
C. A word or term not interpreted or defined by this article shall be used with the meaning of common or standard utilization.

(Ord. No. ___, § _, _-_-__)

ARTICLE III. – Definitions

Section 300. - Definitions

Unless the context specifically indicates otherwise, the meaning of the terms used in this ordinance shall be as follows:

Best Management Practice (BMP) - A practice or combination of practices based on current, accepted engineering standards that prevent or reduce storm water runoff and/or associated pollutants. BMPs include schedules of activities, prohibitions of practices, general good housekeeping practices,

pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Construction Plans - Detailed plans showing the existing and proposed features of a proposed development and engineering calculations supporting the design of the proposed features.

County Drain - A drain which has been designated as an Established Drain wholly within Macomb County. The drain as defined shall include the main stream or trunk and all tributaries or branches of any creek or river, any watercourse or ditch, either open or closed, any covered drain, any sanitary or any combined sanitary and storm sewer or storm sewer or conduit composed of tile, brick, concrete, or other material, any structures or mechanical devices, that will properly purify the flow of such drains, any pumping equipment necessary to assist or relieve the flow of such drains and any levee, dike, barrier, or a combination of any or all of same constructed, or proposed to be constructed, for the purpose of drainage or for the purification of the flow of such drains, but shall not include any dam and flowage rights used in connection therewith which is used for the generation of power by a public utility subject to regulation by the public service commission.

Design Storm - A rainfall event of specified return frequency and duration (e.g. a 100-year, 24-hour storm) that is used to calculate peak flows and /or runoff volumes.

Detention Facility - A storm water management practice that captures storm water runoff temporarily and releases the storm water to a surface water body or drain at a restricted rate.

Development - A residential, industrial, municipal, commercial, or other project involving the construction of structures and/or paved surfaces on natural or previously developed land.

Drainage District – Any county or inter-county drainage district legally established pursuant to applicable provisions of the Drain Code.

Easement - A legal right granted by a property owner to another entity, allowing that entity to make limited use of the property for a specific purpose.

Established Drain - An open or enclosed storm water conveyance system that has been legally established as a county or inter-county drain pursuant to applicable provisions of the Drain Code.

First Flush - During the early stages of a storm, storm water with a highly concentrated pollutant load, due to the runoff washing away the pollutants that have accumulated on the land.

Freeboard - The vertical distance from the top of an embankment to the design water elevation of a detention basin or retention basin, required as a safety margin.

Hazardous Materials. Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may

cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Headwater - The depth of water at the upstream end of a culvert.

Illegal Discharge - Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in Section 600.1.A of this ordinance.

Illicit Connections - An illicit connection is defined as either of the following:

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

Infiltration - The absorption of water into the ground, often expressed in terms of inches per hour.

Inter-county Drain - A drain traversing two or more counties that has been legally established as an established drain.

Invert - The interior surface of the bottom of a pipe.

Municipal Separate Storm Sewer System (MS4) - means the publicly owned and operated system (including but not limited to roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels) that is designed or used for collecting or conveying storm water; is not a combined sewer where storm water mixes with sanitary wastes; and is not part of a POTW; and which are not "waters of the state". The term does not include separate storm water drainage conveyances that serve an individual building or comparable discrete area. The system may convey the non-storm water discharges which are excluded from prohibition by this ordinance and as described in Section 600.

Non-stormwater - Any discharge to the storm drain system that is not composed entirely of storm water are prohibited. *Any discharges or flows categorized and/or defined as non-stormwater discharges or flows if identified as significant contributors to violations of Water Quality Standards and are prohibited to storm sewers within the City. This ordinance shall not authorize illicit discharges; however, the City excludes prohibiting the discharges or flows listed in Section 600. of this ordinance.*

Obvert – The interior surface of the top of a pipe.

Pre-development Rate – The peak outflow rate of the property based on existing pervious and impervious areas.

Pre-developed Rate – The peak outflow rate of the property based on existing surface prior to any development, i.e. agricultural.

Proprietor - A person, firm, association, partnership, corporation or combination of any of them which may hold ownership in land whether recorded or not. "Proprietor" shall be synonymous with "Developer" or "Land owner".

Retention Facility - A storm water management practice that captures storm water runoff and does not discharge to a surface water body or watercourse, but allows the water to evaporate or infiltrate into the ground.

Redevelopment - Additions and/or modifications to an existing development.

Riprap - A combination of large stone, cobbles, and boulders used to line channels, stabilize banks, reduce runoff velocities, or filter out sediment.

Runoff - The excess portion of precipitation that does not infiltration into the ground or is not captured by vegetation, but flows overland to a stream, storm sewer, or water body.

Spillway - A depression in the embankment of a detention basin used to allow overflow of storm water during storm events in excess of the design storm.

Storm Drain - storm ditch or storm sewer or conduit composed of tile, brick, concrete, or other material, any structures or mechanical devices, that will properly purify the flow of such drains, any pumping equipment necessary to assist or relieve the flow of such drains and any levee, dike, barrier, or a combination of any or all of same constructed, or proposed to be constructed, for the purpose of drainage or for the purification of the flow of such drains.

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

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

Tailwater - The depth of water at the downstream end of a culvert.

Time of Concentration - The time it takes for surface runoff to travel from the hydraulically farthest portion of a watershed to the design point.

Wastewater means any water or other liquid, other than uncontaminated storm water, discharged from a facility.

Waters of the State - means groundwaters, lakes, rivers, and streams and all other watercourses and waters, including the Great Lakes, within the jurisdiction of this state. (R324.3101 (aa), 451 PA 1994),

(Ord. No. ___, § _, _-_-__)

ARTICLE IV. – GENERAL REQUIREMENTS

Section 400. Requirement To Prevent, Control, And Reduce Storm Water Pollutants By The Use Of Best Management Practices.

A. City, with this ordinance, adopts requirements identifying Best Management Practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of storm water, the storm drain system, or waters of the U.S. The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or watercourses through the use of these structural and non-structural BMPs. Further, any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of storm water associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this section. These BMPs shall be part of a stormwater pollution prevention plan (SWPPP) as necessary for compliance with requirements of the NPDES permit.

B. "Reasonable Protection" for the purposes of this ordinance shall mean the installation, operation and maintenance of the required structural and/or non-structural BMPs, implementation and documentation of the BMPs operation and maintenance procedures and practices; and pollution prevention and good housekeeping (P2/GH) procedures and practices necessary for the establishment to comply with state and federal stormwater regulations.

ARTICLE V. – DESIGN REQUIREMENTS

PREAMBLE

The following general storm water management requirements apply to all new developments and redevelopments in City of CENTER LINE.

(Ord. No. ___, § _, _-_-__)

Section 501. – General Requirements.

A. The design process shall begin by identifying sensitive areas located on the site and laying out the site to protect the sensitive areas.

B. Best Management Practices (BMPs) that reduce the amount of storm water runoff and improve water quality are required and shall be designed on a site specific basis. All BMPs shall be included on the plans and will be subject to review and approval by the appropriate government agency such as the City of CENTER LINE, the Macomb County Public Works Office (MCPWO) and the Michigan Department of Environmental Quality (MDEQ) as necessary for permits.

1. During construction, all sites that disturb one or more acres of land, or are located within 500 feet of waters of the state, BMP usage shall be monitored and recorded in the weekly Soil Erosion Sedimentation Control (SESC) reports. In such cases, weekly SESC reports shall also be required during construction.

2. Land uses with potential for significant pollutant loading, including but not limited to: gas stations, commercial vehicle maintenance and repair, auto recyclers, recycling centers, and scrap yards, will require BMPs which address regulation of the specific hazard as determined by the MCPWO or the City Engineer.

3. The Developer/Owner shall include a long-term operation and maintenance schedule for all permanent BMPs. A maintenance agreement between the Developer/Owner and the City is required for permanent BMPs which shall include but not be limited to: inspection of structural or vegetative BMPs, performance of maintenance and corrective actions when BMPs are neglected by the owner, and deed restrictions. All such maintenance agreements shall be binding on the property and shall remain in effect in the event the property ownership is transferred or sold.

4. Projects that disturb more than 5 acres of land, require a NPDES permit.

C. Onsite management of storm water is required first and foremost, unless site constraints consistent with the flowchart, as determined by the City Engineer, preclude this approach.

D. Storm water shall be managed using three standards: flood control, water quality, and pre-treatment to protect both water resources and real property.

1. Flood control shall be provided for all sites through detention. Retention systems are not permitted. On-site detention of storm water is required of all new developments or redevelopments to maintain the peak outflow to a rate not exceeding the pre-development runoff rate.

2. Water Quality control system shall be provided on all new developments or redevelopments and may be accomplished with manufactured units, settling ponds/forebay, bio-filtration, or combination of systems. Developments that disturb less than one acre, and are not part of a larger common plan of development or sale, may be

exempted from the City's Water Quality treatment standards as approved by the City Engineer, except for high risk pollutants.

a. Water Quality control system must reduce post development total suspended solids (TSS) loadings by 80% or to not exceed solids loadings of 80 milligrams per liter.

b. Water Quality control systems must provide a minimum treatment volume equal to one inch of runoff from the project site.

c. The use of many decentralized Low Impact Development (LID) BMPs is not mandated, but is encouraged on private sites.

d. The City of Center Line does not have any open municipal or open County drains however, channel protection is required. It is required that the post-development project site runoff volume and peak flow rate must be maintained at or below pre-development levels for all storms up to the 2-year, 24-hour event. Pre-development level means the runoff flow volume and rate for the last land use prior to the planned new development or redevelopment. Compliance with this requirement is determined by calculating the existing ("pre-development") and post-development runoff volume and rate for the 2-year and smaller storm events. The method is described in the Department of Environmental Quality (DEQ) publication *Computing Flood Discharges for Small Ungaged Watersheds*, dated July 2003 (updated January 22, 2010).

e. If it is demonstrated using the Alternative Approach Flowchart (Exhibit A) that the development cannot meet the required channel protection performance standard, the developer may propose incorporation of green infrastructure (i.e. Rain gardens, green (vegetated) roofs, permeable pavement, impervious cover removal, use of trees, etc.) This includes instances where site conditions (e.g., space limitations or tight soils that prevent infiltration or soil or ground water contamination, "hot spots") challenge or prohibit feasibility of maintaining the project site's pre-development runoff levels for all storms up to the 2-year, 24-hour event. Green Infrastructure shall be allowed under all circumstances consistent with the flowchart. Review of these proposals will be consistent with the "SEMCOG Low Impact Development Manual for Michigan, 2008" or current standards.

3. Pre-treatment is required for infiltration and filtration for ease of maintenance and to protect BMP integrity and preserve longevity.

E. Overland flow routes and the extent of high water levels for the 100-year storm shall be identified for all sites.

F. Storm water discharges from activities with a high risk for an accidental spill of pollutants (storm water “hot spots") shall provide spill containment.

G. The design maximum release rate, volume or concentration of storm water discharged from a site shall not exceed the capacity of existing infrastructure or cause impairment to the offsite receiving area. Evaluation of the existing outlet must be performed and an adequate outlet must be provided. Designing engineer should contact the City Engineer to determine available capacity of the downstream system.

H. Unless otherwise noted, hydraulic and hydrologic calculations (including rainfall volumes and distributions) shall be based on current MDEQ standards (i.e. NOAA Atlas 14) and procedures in place at the time of application.

I. Construction plans for a phased development shall show the existing and/or proposed drainage systems for all prior phases of the development, unless the drainage system for the current phase is entirely independent of the prior phases. Furthermore, drainage plans for a phase of a development must not be dependent upon work planned to be performed in a future phase.

J. Plans shall include a grading plan showing existing and proposed topographic contour lines and proposed finish floor and basement floor elevations.

K. All existing natural or manmade drains shall be shown on the plans. The proposed changes to the site must not interfere with Common Law Natural Flow Rights. Existing drains must be preserved or relocated, or the flow otherwise accommodated by the proposed plans. Provisions for the maintenance of the drain must be included in the deed restriction or an equivalent legally binding agreement. MDEQ and/or the Army Corps of Engineers may also require permits for changes made to such drains.

L. If an established County drain is involved, construction plans shall include a note indicating that “All work performed in the right-of-way of an established drain shall require a permit from the Macomb County Public Works Commissioner.”

M. Where drainage is discharged to an established drain, such outlets shall be so designed as to enter the drain at an angle of 90 degrees or less, as determined by the upstream centerline.

N. Unless the storm sewers are to be owned and maintained by a single private entity (i.e. municipal or commercial development, manufactured housing community, etc.), all storm sewers shall be located within an easement. The minimum easement width for a storm sewer shall be 12 feet centered on the sewer centerline. City Engineer may require a larger easement as necessary to facilitate future repairs.

O. Privately maintained storm infrastructure, including but not limited to; pipes, Storm water detention facility, water treatment units, bio-swales, etc., will require a maintenance agreement.

P. All existing and proposed on-site drainage easements shall be clearly shown.

Q. No public Right-of-Way runoff shall be routed through private storm sewer unless approved by City Engineer

(Ord. No. ___, § _, _-_-__)

Section 502. – Established Drains.

No construction activities shall be allowed without approval from the Macomb County Public Works Commissioner for any development directly discharging to an established County Drain. All work within the Right-of-Way of the established drain is subject to the design standards and requirements of the Macomb County Public Works Office.

(Ord. No. ___, § _, _-_-__)

Section 503. – Storm Sewers and Structures

Storm water conveyance system is comprised of the combination of storm sewers (conduits) or open ditches, and connecting structures such as manholes and catch basins conveying the Storm water runoff to the outlet point.

A. Storm Sewers

1. All storm sewer pipe, manholes, catch basins, and inlets shall meet MDOT specifications unless otherwise approved by the City Engineer.

2. Plans shall show boundaries and acreages of catchment areas contributing runoff to each proposed or existing catch basin and/or inlet. Runoff from off-site tributary areas must be accommodated in design or rerouted.
3. Maximum catchment area for a catch basin shall be as follows:

For intercepting catch basins:	10,000 square feet
For low point catch basins:	12,000 square feet

4. The required discharge capacity for each reach of sewer shall be determined by the Rational Method.

5. A 10-year design storm shall be used such that rainfall intensity, $I = 175 / (T + 25)$, where T = time of concentration in minutes.

6. Where a 100-year design storm event calculation is required, the rainfall intensity shall be such that, I = 275 / (T+25) where T = time of concentration in minutes.

7. The runoff coefficient, C, shall be in conformance with normal design practice. Where a weighted average coefficient is employed, the computations shall be submitted for review.
   a. Minimum C-coefficients for various finish surfaces are as follows:

Water Surface:	1.00
Impervious Pavement & Roofs:	0.90
Dense graded stone & pavers:	0.80
Open graded stone:	0.60
Lawns:	0.20

   Other surface c-coefficients subject to approval by City Engineer

   b. The following averaged C-coefficients may be used in lieu of weighted coefficient for proposed developments:

Single-Family Residential:	0.35
Multi-Family Residential:	0.55
Commercial:	0.85
Industrial:	0.90

8. A complete set of storm sewer design calculations shall accompany every set of construction plans submitted for review.

9. Sewer capacities shall be based on the Manning equation for full flow velocity. With Manning's "n" coefficient as follows:

Smooth Lined, Metal, PVC or HDPE Pipe:	0.011
Reinforced Concrete Pipe:	0.013
Corrugated, Metal, PVC, or HDPE Pipe:	0.024

   Other pipe material n-coefficients subject to approval by city engineer.

10. Minimum allowable full flow pipe velocity shall be 2.5 ft/sec. (except where the minimum diameter requirement makes this unachievable.) Desirable pipe velocity range shall be 4-8 ft/sec. Maximum allowable pipe velocity shall be 10 ft/sec.

11. Hydraulic grade lines for the 10-year storm shall be calculated and shown as a part of all storm sewer profiles.

    a. The hydraulic grade line may rise above the top of the pipe but in no case shall the elevation of the hydraulic grade line exceed the elevation of a point lying 1 foot below the rim elevation of a manhole, catch basin or inlet.

b. The hydraulic grade line upstream of a detention facility shall be calculated assuming the design high water elevation (e.g. full detention). OR 8/10 of pipe, whichever is higher.

12. To account for energy losses, at structures a flow change of direction of greater than 45 degrees, a 0.10' drop shall be added from the upstream to downstream pipes. Approval from City Engineer is required to waive the requirement for sites where existing conditions do not provide adequate storm depth to facilitate the drop.

13. At structure with a change of pipe size, the 8/10th elevation, OR obvert of the pipes shall align. Approval from City Engineer is required to waive the requirement for sites where existing conditions do not provide adequate storm depth to facilitate the drop.

14. The storm sewer pipe shall have a minimum diameter of 12 inches when constructed in a public right-of-way or easement.

15. Storm sewers shall have a minimum of three and one-half feet of cover from the finished surface to the horizontal centerline, where existing conditions allow. City Engineer may approve less cover should existing conditions restrict cover.

16. The storm sewer plan and profile drawing shall show the following data:
    Proper identification and numbering of manholes, catch basins and inlets
    Invert and casting elevations for all structures
    Pipe length (C/L to C/L of structures)
    Pipe diameter
    Pipe slope
    Pipe class or designation
    Detail of trench construction and type of backfill material

17. An end section with prefabricated bar screen shall be installed on the end of all storm sewers 12 inches in diameter or larger. Openings of the bar screen shall be no more than six inches on center.

B. Structures

1. The minimum inside diameter of all manholes, catch basins and inlets shall be 48 inches, with the following exception: Inlet structures from which water will be discharged directly into a catch basin may be 24 inches inside diameter. The depth of such inlets shall be no greater 5.0 feet and no less than 3.5 feet from the top of frame and cover to the invert.

2. Manholes and inlets structures may be constructed of brick, manhole block, precast concrete (ASTM C478) or cast-in-place concrete.

a. All manhole block or brick structures shall be plastered on the outside with 1 to 2.5 mix of portland cement mortar, ½-inch thick. No calcium chloride or other chemical shall be added to lower the freezing point of the mortar, as the strength of the mortar may be lessened.

3. Maximum manhole spacing shall be as follows:

For sewers 12 inches to 42 inches:	400 feet
For sewers 48 inches to 60 inches:	500 feet
For sewers 66 inches and larger:	600 feet

4. Yard type catch basins shall be provided at all low points in drainage swales. Provide intercepting yard type catch basins such that not more than 300 feet of swale drainage runs into any one catch basin other than a low point catch basin where 600 feet of drainage is allowed.

(Ord. No. ___, § _, _-_-__)

Section 504. – Storm Water Management Facilities – Flood Control

A. Retention (not permitted) or Bio-retention

A storm water management practice that captures storm water runoff and does not discharge to a surface water body or watercourse, but allows the water to evaporate or infiltrate into the ground. The facility could be underground or above ground. Above ground facilities may be vegetated facilitating absorption of water by the vegetation (bio-retention).

B. Detention (flood control)

Detention storage facilities are designed to detain runoff for a short period of time and then release it to a watercourse where it returns to the hydrologic cycle. The objective of detention storage is to regulate the released runoff rate and to reduce the impact on downstream drainage systems. Detention storage may be in the form of surface storage i.e. pond (basin) or parking lot, or underground storage. Detention ponds may be dry or wet ponds. Where the pond is designed as a wet pond, a minimum of 3’ deep permanently wet pool shall be incorporated to reduce vegetative growth (algae).

In keeping with Common Law Natural Flow Rights and the Michigan Drain Code, concentrated discharges of storm water (such as the outflow from a detention facility) or increased surface water runoff over property owned by others must be pursuant to a valid right-of-way, easement, or other written permission from all property owners affected. The outflow from a detention facility is considered to be such a concentrated discharge of storm water.

Infiltration may be incorporated into a detention facility design, subject to review and approval by the City Engineer except in areas of soil or groundwater contamination as determined by and in coordination with the MDEQ. The design engineer / owner shall provide field testing to support permeability rates pre- and post-construction. A safety of factor of 2 shall be utilized to determine the design permeability rate. Infiltration designs shall be based on Darcy's Law of Permeability.

1. All forms of detention storage shall meet the following criteria:

    a. On-site detention of storm water is required of all new developments or redevelopments to maintain the peak outflow to a rate similar to the pre-development runoff rate for the 10 year 24 hour storm event as calculated from equation in Section 503.1.E. In no case shall the outflow from a site exceed the capacity of the receiving drain to accept the flow. Design Engineer should contact the City Engineer for existing capacity of the receiving drain.

    b. The detention pond shall be designed to drain completely within 24 to 48 hours after a rain event. In the case of extended detention when required for channel protection, the volume shall be held for 48 hours or released at the 1-year/24 hour discharge rate.

    c. The tributary area shall include all acreage contributing runoff to the detention storage facility, including any off-site tributary area in its existing state, whether developed or undeveloped.

    d. The following equations shall be used to determine the 10-year detention volume:

    Q_a = Allowable release rate, cfs
    $Q_o = Q_a / (A\ C)$, where A = Tributary area in acres, C = weighted runoff coefficient
    Detention time in minutes, $T = -25 + \text{sqrt}(6{,}562.5 / Q_o)$
    Storage volume per impervious acre, $V_s = 10{,}500\ T / (T + 25) - 40\ Q_o\ T$
    Required detention volume in cubic feet, $V = V_s \times A \times C$

    e. If the site is located near the downstream end of a drainage district, the City Engineer may require that the proprietor's engineer generate and submit hydrographs of the outflow from the existing site and from the proposed site (i.e. detention facility) and a hydrograph of the flow in the receiving drain to verify that the detained outflow would not result in an increase in the peak flow in the receiving drain. If the detained outflow would result in an increase in the peak flow in the receiving drain, then storm water detention is not an acceptable storm water management option.

    f. Portions of the developing site may be allowed to drain unrestricted (i.e. not through a detention facility) if any of the following conditions are met:

A. The areas draining unrestricted are not being disturbed or altered by the construction, such that they will maintain their existing drainage characteristics and patterns.

B. The runoff coefficient of the proposed surface does not increase as part of the re-developed area.

g. Where the detention facility is to be equipped with a pump discharge, the proprietor shall be required to furnish design data on pump(s) and discharge force main so that the capacity of the system can be verified. These data will include system curve calculations, the pump performance curves, and a profile of the system piping. The pumping station should be able to release the first flush volume over approximately 24 hours, the bankfull flood volume over 24-48 hours, and the 100-year flood volume at a rate not to exceed 0.15 cfs/ac of tributary area. A back-up generator will be required to ensure the operation of the pumping station in the event of power loss. The City discourages the use of pumped outlets, and will not accept responsibility for damages due to power failure, pump malfunction, or Acts of God that result in storm conditions that exceed the design conditions of the pump station.

h. An agreement for acceptance and maintenance of the detention facility, executed by the proprietor, shall be submitted to the City of CENTER LINE prior to final approval. The agreement both as form and content shall be subject to the approval of the City.

i. A minimum of one-foot freeboard shall be provided above the design high water elevation.

j. A 12-ft. wide minimum access easement shall be provided for all detention facilities, as measured from the top of bank or perimeter of storage (underground facilities).

k. A 25-ft. wide minimum setback from property lines and buildings shall be provided for all detention basins, as measured from the top of bank or perimeter of storage (underground facilities).

l. Detention basin configurations where storm water must “back-up” into the basin (i.e. storm water enters the conveyance system downstream of the basin) will not be permitted.

m. Multiple detention basins serving a single development should function independently. If the outflow from one basin passes through another basin before being discharged to the receiving drain, a full hydraulic analysis (i.e. a computer model simulation) will be required to ensure that the system functions satisfactorily.

n. If at any time the detention basin is to function as a sediment basin (for use during the construction phase), an outlet filter shall be provided. Such an outlet filter is to be designed in accordance with criteria established by the Macomb County Public Works Office. Such use of a detention basin shall be considered a temporary measure only. The proprietor shall be responsible for sediment removal upon completion of construction.

C. Detention Ponds (basins)

A detention basin is a form of detention storage where the storm water is detained above ground as surface water.

1. Detention volume in a gravity-outlet detention basin must be located:

   a. Above the invert of the lowest row of orifices in the outlet standpipe,

   b. Above the elevation of the dry weather base flow in the receiving drain,

   c. Above the elevation of the groundwater table. Soil boring data used to determine

2. The detention basin outlet shall consist of a vertical standpipe with multi-level orifices to control the release of storm water from the basin, including the first flush volume and 10 year flood volume

   a. The standpipe shall not be less than 36 inches in diameter. Double standpipes (e.g. a 36-inch diameter inner standpipe within a 48-inch diameter outer standpipe) are encouraged. Double standpipes are believed to be less prone to blockages of the control orifices, and therefore require less maintenance. The inner standpipe should contain the appropriate number and configuration of orifices to provide the controlled release of the first flush volume and the 10-year flood volume. The outer standpipe should contain at least several times the orifice area as the inner standpipe over the entire height of the standpipe, such that the head loss across the outer standpipe orifices is negligible.

   b. The standpipe shall contain multiple rows of orifices (i.e. holes) to control the release of the first flush runoff volume and 10-year volume.

      i. First flush orifices shall be located at the elevation of the pond floor (or permanent pool water level, if a wet pond),

      ii. Additional 10-year flood control orifices shall be located at the elevation of the first flush volume in the basin, where the first flush volume is calculated as the

first one inch of runoff over the site, or Vff (cf) = 3630 x A(acres) x C, where C is the runoff coefficient.

iii. Additional one-hundred-year- (or ten-year for sites less than five acres) flood control orifices shall be located at the elevation of the bankfull flood volume in the basin, where the bankfull flood volume is calculated as the rainfall from a 1.5-year storm, or Vbf (cf) = 8170 x A(acres) x C.

c. Orifices should not be less than 3 inch in diameter for single standpipe outlet design. Should smaller orifices be required, a double standpipe design, item 2a above, shall be incorporated.

d. The top of the standpipe shall consist of a grating at or above the design (high) water level to serve as an overflow mechanism, in addition to the overland overflow spillway/berm.

   i. The standpipe overflow grate and spillway must provide adequate capacity to overflow the peak 100-year basin inflow with no more than one foot of head (i.e. water level must not exceed the one foot of freeboard)

e. The standpipe shall be encased in stone extending to the design (high) water level to allow for filtering of the storm water prior to discharge from the basin. The encasement stone size shall be large enough so as not to plug or pass through the orifices in the standpipe.

f. The standpipe shall contain a sediment sump with a depth of at least one foot.

g. The outlet pipe extending from the standpipe to the receiving drain shall be sized to convey the calculated 10-year peak inflow to the detention basin.

h. The location of the outlet pipe extending downstream of the standpipe shall be indicated on a profile drawing of the receiving drain, whether or not the receiving drain is an established drain. The receiving drain profile shall extend at least from the upstream end of the site to the downstream end of the site.

i. A manhole structure with an internal weir wall and orifices can used in lieu of a standpipe design. Orifices smaller than 3 inches in a manhole structure shall be trapped to avoid clogging.

j. The outlet control structure (standpipe or manhole) must be accessible by vehicle for regular maintenance.

3. Downstream of the overflow spillway, the storm water overflow must be directed (either by overland flow or via a swale or ditch) to the receiving drain.

4. The side slopes shall not be steeper than 6 ft. horizontal to 1 ft. vertical. Slope protection shall be provided as necessary. Basin side slope elevation contours shall be shown on the plans. Steeper side slopes may be approved by the City Engineer and may require fencing.

5. Unless the detention basin contains a permanent pool, the bottom of all detention basins shall be graded in such a manner as to provide positive flow to the outlet. A minimum bottom slope of 1% shall be provided.

6. Dry detention ponds shall be seeded (MDOT Class A Seed) or sodded (MDOT Class B Sod) and the turf shall be fully established before the city approves the detention basin for operation and maintenance.

7. Dry detention ponds shall provide a minimum of 1 percent slope along the bottom for drainage.

D. Underground Detention

Underground storage is a form of detention storage where the storm water is detained in underground pipes. Like a detention basin, the water is released at a controlled rate to a receiving drain.

In addition to the general requirements indicated above in Section 504.2.A, underground detention facilities shall meet the following requirements:

a. To minimize sedimentation in the downstream drainage district, sediment shall be removed from the storm water before water enters the underground storage facility (e.g. in first flush forebay, manufactured water quality structures, or within the catch basins using removable filtration inserts).

b. The pipe material used for the underground storage facility shall have an expected life of at least 50 years.

c. Access manholes shall be provided along the underground storage facility to allow for maintenance.

d. No permanent structures shall be constructed above the underground storage facility.

e. Underground chambers with stone bedding will require submittal of the manufacturer's volume calculations for review by the City Engineer. Stone voids storage may be included

E. Parking Lot Surface Detention

Parking Lot Surface Storage is a form of detention storage where the storm water is detained in the parking lot surface creating temporary flooding of the parking lot. Like a detention basin, the water is released at a controlled rate to a receiving drain.

In addition to the general requirements indicated above in Section 504.2.A, parking lot surface detention facilities shall meet the following requirements:

a. Storage elevation must be less than one foot from the finish floor elevation of the nearest building.
b. Storage depth shall not exceed 12 inches at any location of the parking lot.

(Ord. No. ___, § _, _-_-__)

Section 505. – Storm Water Management Facilities – Water Quality Control

Water Quality Control consists of reducing or eliminating pollutants and suspended solids from the storm water runoff prior to discharging to the existing system. Water Quality Control can be achieved by various methods. Water Quality Control should be achieved using Best Management Practices (BMPs) in order to reduce the post development total suspended solids (TSS) loading by a minimum of 80% or not to exceed TSS loadings of 80 milligrams per liter.

A. Settling Ponds (basins) / Forebay

1. A settling pond (first flush pond) is means to detain the first flush volume so that a minimum of 80% of the TSS settle to the bottom of the pond.

2. A settling pond may be stand alone or adjacent to a detention pond as a settling forebay.

3. The first flush volume is calculated as the first one inch of rainfall over the site or

   a. Vff (cf) = 3630 x A(acres) x C, where C is the runoff coefficient

4. The outlet of a first flush basin or sediment collection unit shall be designed to release the first flush volume over 24-36 hours.

5. The first flush basin or sediment collection unit shall contain a bypass structure and/or berm to allow the 10-year peak flow to bypass without hydraulic interference.

B. Structural BMPs

1. Structural BMPs (i.e. prefabricated swirl chambers or sand filter structures) can serve as the water quality management BMPs. Manufacturer's data must be provided, for approval by the City Engineer, to indicate that TSS removal rate is met.

2. Structural BMPs can be designed as in-line or off-line configuration, provided that the structure has built-in overflow mechanism that will not re-suspend settled TSS.

C. Natural BMPs

1. Natural BMPs (i.e. vegetative swales or cells) may be permitted subject to approval by the City Engineer. Design Engineer shall provide data to support TSS removal rate effectiveness.

D. Oil Separators / Spill Containment

1. For Developments where there is an increased risk of pollutants entering the storm system (hot spots), additional means of water quality control such as oil separators or spill containment shall be provided for review and approval by the City Engineer.

(Ord. No. ___, § _, _-_-__)

ARTICLE VI. – DISCHARGE REQUIREMENTS

Section 600. Discharge Prohibitions.

A. Prohibition of Illegal Discharges.

No person shall discharge or cause to be discharged into the municipal separate storm sewer system (MS4) or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

1. The following discharges if identified as not being a significant contributor to violations of Water Quality Standards (WQS) are excluded from discharge prohibitions established by this ordinance:

   a. Water line flushing and discharges from potable water sources

   b. Landscape irrigation runoff, lawn watering runoff, and irrigation waters

   c. Diverted stream flows and flows from riparian habitats and wetlands

   d. Rising groundwaters and springs

   e. Uncontaminated groundwater infiltration and seepage

   f. Uncontaminated pumped groundwater, except for groundwater cleanups specifically authorized by NPDES permits

g. Foundation drains, water from crawl space pumps, footing drains, and basement sump pumps

h. Air conditioning condensation

i. Waters from noncommercial car washing

j. Street wash water

k. Dechlorinated swimming pool water from single, two, or three family residences. (A swimming pool operated by the permittee shall not be discharged to a separate storm sewer or to surface waters of the state without NPDES permit authorization from the MDEQ.

l. Discharges or flows from firefighting activities if identified as not being significant sources of pollutants to waters of the State.

2. Discharges specified in writing by the authorized enforcement agency as being necessary to protect public health and safety.

3. Dye testing is an allowable discharge, but requires a "Notice of Intent to Treat" under the General Rule 97 Certification of Approval to be obtained from the Michigan Department of Environmental Quality (MDEQ) prior to the commencement of the test.

4. The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

B. Prohibition of Illicit Connections.

1. The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.
2. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
3. A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

(Ord. No. ___, § _, _-_-__)

ARTICLE VII. – INSPECTION AND MONITORING REQUIREMENTS

Section 700. Monitoring Of Discharges

A. Applicability.

This section applies to all facilities that have storm water discharges, facilities associated with industrial activity, and those having construction activity.

B. Access to Facilities.

1. The City of Center Line shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the City.
2. Facility operators shall allow the City ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge storm water, and the performance of any additional duties as defined by state and federal law.
3. The City shall have the right to set up on any permitted facility such devices as are necessary and/or required by the MS4 permit to conduct monitoring and/or sampling of the facility's storm water discharge.
4. The City has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.
5. Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the City and shall not be replaced. The costs of clearing such access shall be borne by the operator.
6. Unreasonable delays in allowing the City access to a permitted facility is a violation of a storm water discharge permit and of this ordinance. A person who is the operator of a facility with a NPDES permit to discharge storm water associated with industrial activity commits an offense if the person denies the authorized enforcement agency reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this ordinance.
7. If the City has been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety,

and welfare of the community, then the City may seek issuance of a search warrant from any court of competent jurisdiction.

(Ord. No. ___, § _, _-_-__)

ARTICLE VIII. – ENFORCEMENT

Section 800. Enforcement**.**

A. Notice of Violation.

Whenever the [authorized enforcement agency] finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

1. The performance of monitoring, analyses, and reporting;

2. The elimination of illicit connections or discharges;

3. That violating discharges, practices, or operations shall cease and desist;

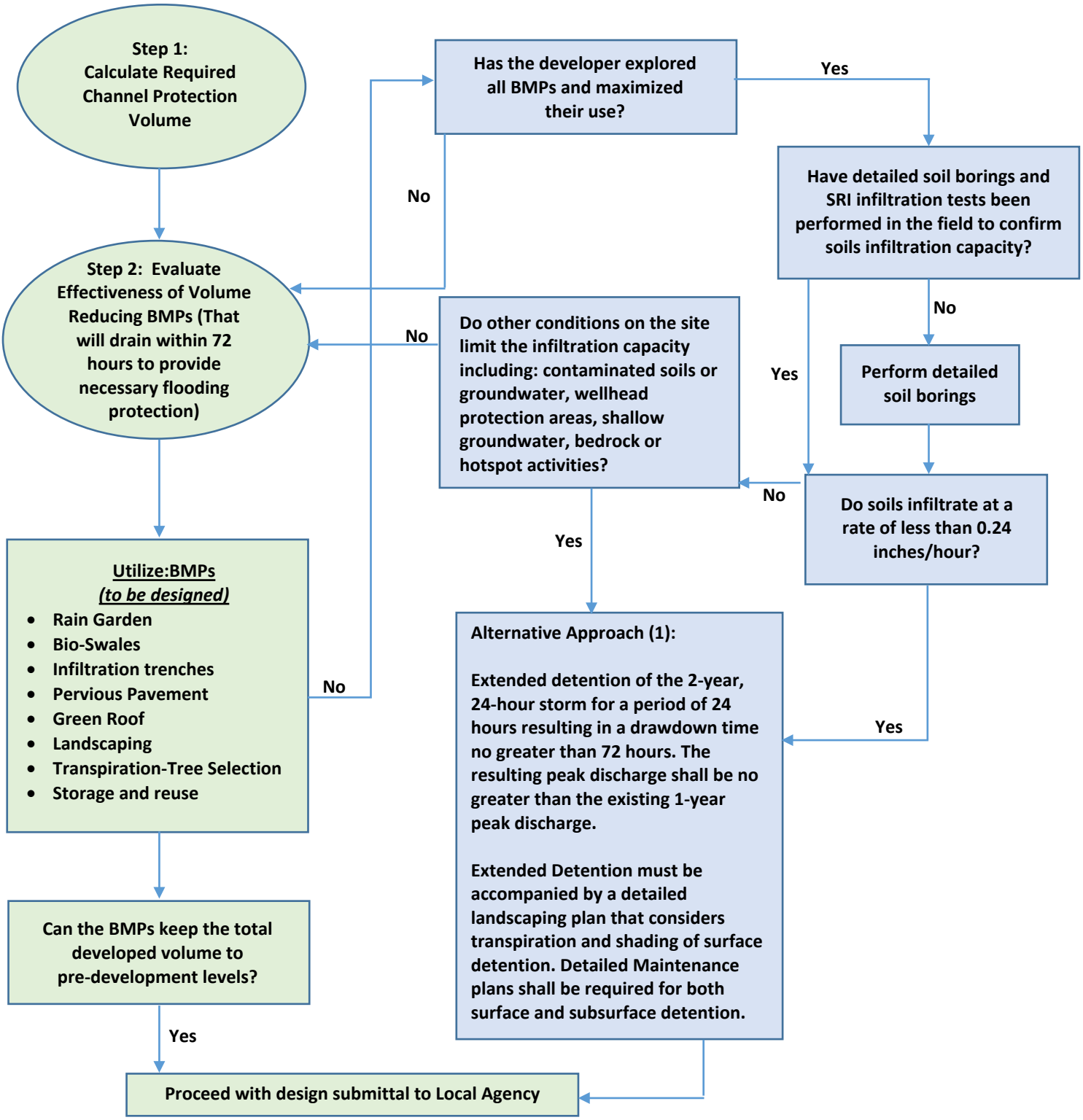
4. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property; and

5. Payment of a fine to cover administrative and remediation costs; and

6. The implementation of source control or treatment BMPs.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

(Ord. No. ___, § _, _-_-__)



Ref: Lower Grand River Organization of Watersheds MS4 Stormwater Ordinance Committee Alternative Approach Flow Chart

1. NOTE: If utilizing extended detention as a post-construction storm water runoff control, additional BMPs likely will be needed to maintain the pre-development volume and peak rate levels for all storms up to the 2-year, 24-hour event, through green infrastructure or specific low impact development (LID) on-site BMPs for meeting the performance standar

City of Center Line

Storm Water Management Program (SWMP)

Appendix E

Pollution Prevention and Good Housekeeping (P2GH)

November 2007
Revised May 24, 2019

Center Line DPW Daily Log Sheet
E.01 Spill Prevention SOP
E.02 Vactor Policy signed
E.03 Vehicle and Equipment Fueling SOP
E.04 Vehicle and Equipment Cleaning SOP
E.05 Vehicle and Equipment Repair SOP
E.06 Outdoor Container Storage SOP
E.07 Outdoor Equipment Maintenance SOP
E.08 Outdoor Storage of Raw Materials SOP
E.09 Waste Handling SOP
E.10 Building and Grounds SOP
E.11 Parking Lot Maintenance SOP
E.12 Safer Alternative Products SOP
E.13 Road and Street Maintenance SOP
E.14 Salt Application and Storage SOP
E.15 Drainage System Maintenance SOP
E.16 Water & Sewer Utility Maintenance SOP
E.17 Reporting and Recordkeeping SOP
Center Line PIPP

CITY OF CENTER LINE

Department of Public Works

Daily Log Sheet

EMPLOYEE:_____ **Date:**____/___/____

LABOR

JOB #	HRS.	REG.	1.5	2.0	COMP.	ACCOUNT #	

VEHICLE

JOB #	VEHICLE #	HRS.	REPAIR / MAINTENANCE NEEDED

EQUIPMENT AND TOOLS

JOB #	EQUIPMENT AND TOOL #	HRS.	REPAIR / MAINTENANCE NEEDED

PARTS

JOB #	DESCRIPTION	QTY	
			PLACE TAG / BAR CODE HERE
			IF NEEDED USE BACK OF LOG
			INCLUDE ALL SUPPLIES, PARTS AND SAFETY EQUIPMENT
			PUT JOB # ON TAG

USE REVERSE SIDE FOR NOTES:

APROVED BY:_____

E.1 Spill Prevention, Control & Cleanup SOP

Description

Spills and leaks, if not properly controlled, can adversely impact the storm drain system and receiving waters. Due to the type of work or the materials involved, many activities that occur either at a municipal facility or as a part of municipal field programs have the potential for accidental spills and leaks. Proper spill response planning and preparation can enable municipal employees to effectively respond to problems when they occur and minimize the discharge of pollutants to the environment. Since spill prevention is such a broad topic, many areas related to spill prevention and control are covered throughout the remaining SOP fact sheets.

Objectives

- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment
Nutrients ✓
Trash
Metals ✓
Bacteria

Pollution Prevention

- No herbicides and pesticides are stored indoors in the Parks maintenance building ("Quonset") at Memorial Park.

- Storage areas for other materials are inspected daily.

- Herbicides and pesticides are not stored onsite with the exception of "Altosid XR Extended Residual Briquets" which is stored at the DPW. These briquettes are to prevent mosquitoes from breeding in catch basins. These and other materials are only stored in their original containers, and are normally be obtained in quantities 5 gallons or less.

- The least toxic chemical control will be selected by the City's contracted service provided as dictated by contract language. If a biological or alternative control is available, it will be selected as a first option. Chemicals are purchased in the amounts projected to be necessary to complete the application cycle. Inasmuch as possible, chemicals are used by the contractor as needed and storage is not necessary.

- All mixing of herbicides and pesticides will be performed on Michigan Department of Agriculture (MDA) approved platforms by licensed contractors. The mixing of herbicides and pesticides will always be accomplished by trained and certified applicators. Sprayers will never be left unattended during filling operations. Herbicides and pesticides will never be mixed in areas where spillage cannot be controlled. All precautions will be taken to prevent spillage, and mixed on concrete surfaces where any minimal residues can be safely contained utilizing a Michigan Department of Agriculture (MDA) approved spill kit.

- Spill cleanup material is readily available in the storage and maintenance areas.

- Paints and coatings such as chalk and paint for the athletic fields are stored only indoors in a designated area within the Quonset and DPW. Containers are held within an appropriately designed storage cabinet. Small quantities of aerosol paints are stored in the maintenance shops areas.

- Whenever possible, the least toxic product will be selected for painting/coating operations. In most cases, paints/coatings are purchased in small easy-to-handle quantities, usually gallon-sized containers; which all for easier handling, less potential spillage, and less waste to dispose of.

- Paint/coating products will be used as completely as possible. Any latex based product remaining in the container will be allowed to harden. The container and residual product can then be disposed of in a landfill. Unusable product that cannot be handled in this manner will be stored until a City sponsored household hazardous waste disposal day, and then be removed by a contracted waste hauler.

Protocols

- All material handling is conducted indoors, under cover, or away from storm drains or sensitive water bodies.

- Spill cleanup materials, such as absorbents are located in areas where they are readily accessible (e.g. near storage and maintenance areas, etc.).

Spill Cleanup Procedures

- For spills in which there is no immediate dangers to employees or the general public and does not represent a danger of contamination to a sanitary sewer, storm sewer, of the ground:

  - Contain spill to the smallest area possible.
  - Review the Safety Data Sheet for determination of proper spill handling, and appropriate personal protective equipment selection.
  - Place compatible absorbent material or spill pads on the area.
  - Clean up and containerize the absorbent materials.
  - Properly dispose of waste materials.
  - Determine and perform any additional cleaning requirements.

- For a spill that represents an immediate danger to employees or the general public and/or has the potential to impact the sanitary sewer, storm sewer, or the ground:

  - Notify the Department Supervisor on duty.
  - If there is the treat of fire, explosion, or if any person(s) exhibit severe symptoms of

exposure, contact 911 to initiate local emergency services.
- Alert anyone in the area and begin evacuation procedures.
- Use booms or other absorbents to dike the spill area if safe to do so, and secure the area from unauthorized personnel. Refer to the Safety Data Sheet to determine the proper personal protective equipment.
- Remove all sources of ignition for releases of flammable or combustible materials.
- The Department Supervisor will initiate all notification procedures and contact the contracted emergency response company to mitigate and remediate the release.
- The Department Supervisor will assess the spill and notify all agencies as required.

Reporting

- Spills are reported in accordance with applicable reporting laws. Spills that pose an immediate threat to human health or the environment must be reported immediately to 911 and the City of Center Line Public Safety Department (Fire Protection Services). Macomb County Hazardous Materials Response Team personnel (Clinton Township, Eastpointe, Lenox Township, Mount Clemens, Shelby Township, Sterling Heights, Warren, Roseville and Center Line participate) may be mobilized via 911 as well as the Pollution Emergency Alerting System (PEAS) at 800-292- 4706 and the National Response Center (NRC) at 800-424-8802 as necessary.

- Spills that pose an immediate threat to human health or the environment may also need to be reported within 24 hours to the Macomb County Emergency Management which coordinates the Macomb County Local Emergency Planning Committee (LEPC), State Emergency Response Center (SERC), Michigan Department of Agriculture (MDA), various divisions of MDEQ, and the Department of Labor and Economic Growth (DLEG).

- After the spill has been contained and cleaned up, a detailed report about the incident will be generated and kept on file. The incident may also be used in briefing staff about proper procedures.

Contact Persons

- The Public Works Department is responsible for maintaining the majority of the City's facilities. The primary contact person for issues regarding these facilities is the DPW Superintendent, Gary McKinney, at 586-756-4502.

From: Gary McKinney
Superintendent
Department of Public Works

Date: January 21, 2013

To: All DPW Employees

Re: Sewer Vactor Operation Policy and Discharge of Liquid and Solid Waste

1.0 Purpose

The purpose of this policy is to ensure compliance with State and Federal regulations for stormwater and relating to Sanitary Sewer Overflows (SSO's). This is to eliminate the possibility of discharging of contaminated materials into the City storm drains that lead to rivers, streams and lakes as waters of the State. Under the Clean Water Act (CWA) 33 U.S.C. §1251 et seq. (1972) and the Natural Resources Protection Act of 1994 PA 451, The Michigan Department of Environmental Quality (MDEQ) has regulations against the discharge of raw or partially treated sewerage to waters of the State.

2.0 Scope

This policy applies to all Department of Public Works (DPW) employees full time and part time that work on the Sewer Vactor or maintenance of the sewer system.

3.0 Policy

It is the policy of the City of Center Line to provide clear guidance to all Public Works employees to ensure protection of the environment and that regulations of the Clean Water Act are adhered to.

4.0 Definition

4.1 During the cleaning of a sanitary sewer, either when the sewer vactor is full or the job is completed, the Sewer Vactor truck storage tank must be emptied and cleaned. To decant liquids only, the truck is to be taken to the Stephens Lift Station and decanted to the sanitary manhole closest to the station. Remove the manhole cover, unroll the drainage hose and place the discharge end in the manhole. Upon confirmation that the equipment is properly arranged, begin to deposit the liquid into the manhole and the sanitary sewer leading to the Lift Station.

4.2 If while cleaning the sanitary sewer main you are removing a large amount of solids it may be necessary to take the Sewer Vactor to the City of Warren's Wastewater Plant to dump the contents. At this point, call the DPW Superintendent or his representative to call the Warren Wastewater Plant to get permission to use their facility.

4.3 Under no circumstance is the Sewer Vactor to be decanted or dumped in the DPW yard if sanitary sewage is involved.

4.4 For storm sewer use, the Sewer Vactor shall be properly flushed or decontaminated prior to this use. The decontamination materials shall be disposed of as for sanitary sewer materials and in compliance with State and Federal Regulations.

5.0 Responsibilities

The City Manager and City Clerk have the overall responsibility for ensuring compliance with this policy.

The DPW Superintendent is responsible for ensuring compliance with this policy within this department.

Each DPW employee is also individually responsible for compliance with this policy.

Gary McKinney

Public Works Superintendent

John Michrina

City Manager

E.3 Vehicle and Equipment Fueling SOP

Description

Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oil and grease, as well as heavy metals to storm water runoff.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓
Oxygen Demanding	

Pollution Prevention

- The City does not currently conduct any on-site fueling. Properly maintained off-site fueling stations are utilized for all vehicle and equipment fueling with the exception of small gas cans for parks and grounds lawn and landscape maintenance equipment.

- The focus of pollution prevention activities is on containment of spills and leaks, most of which may occur during liquid transfers.

Protocols

- "Spot cleaning" of leaks and drips is routinely conducted.

- Maintenance staff members are familiar with the site's proper spill cleanup procedures and equipment including absorbent materials, rags and containment booms.

E.4 Vehicle and Equipment Cleaning SOP

Description

Wash water from vehicle and equipment cleaning activities performed outdoors or in areas where wash water flows onto the ground can contribute toxic hydrocarbons and other organic compounds, oils and greases, nutrients, phosphates, heavy metals, and suspended solids to storm water runoff.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment ✓
Nutrients ✓
Trash ✓
Metals ✓
Bacteria
Oil and Grease ✓
Organics ✓
Oxygen Demanding

Pollution Prevention

- The City maintains and operates a vehicle/equipment wash bay at its Public Works Building garage that is equipped to handle and properly dispose of the wash waters and drain to the sanitary sewer.

- The fire apparatus and equipment washing at Fire Stations are conducted within the vehicle apparatus bays where there are floor drains piped to the City's sanitary sewer system.

Vehicle and Equipment Cleaning/Washing Purpose

The purpose of this policy is to comply with the MDEQ and EPA regulations regarding storm water runoff. Any dry or liquid product or contaminant that may be on the ground, whether it is on a lawn or hard surface such as pavement, may eventually reach a storm water drain during a rain or when washing apparatus or equipment outside of the fire station. Once that potential runoff reaches the storm water drain, it will eventually reach a waterway such as a river, lake or pond. This runoff could have a negative effect on the environment. To mitigate the issue, the City implemented a policy to eliminate or reduce the potential discharge of such storm water runoff contamination.

Policy

It is the City's policy to take a proactive approach to minimize and eliminate the discharge of potential contaminants produced through the washing and cleaning of vehicles, fire apparatus, and equipment into the storm water drain system.

Procedure

Cleaning solutions:

The City, inasmuch as possible, will use phosphate-free detergents (i.e. ZEP Vehicle Care Blue Coral) for washing vehicle as appropriate.

Personnel will follow the manufacturers recommended procedures as printed on the

cleaning detergent.

Vehicles/Equipment/Apparatus:
All vehicles will be washed within the confines of the vehicle apparatus bays in the case of fire apparatus, or the Public Works Building garage for other City vehicles and equipment. Runoff of cleaning detergents and water will be squeegeed or diverted to floor drains within the apparatus and garage. Runoff within the floor drains will run to the sanitary sewer where it will be treated at a wastewater treatment plant.

Personnel awareness:
This policy will be distributed to all affected personnel and will be posted in a conspicuous manner at City Public Works, Parks Maintenance buildings and fire station.

Maintenance:
Floor drains will be inspected and clean periodically to remove solid sedimentary collected discharge.

E.5 Vehicle and Equipment Repair SOP

Description

Vehicle or equipment maintenance and repair is potentially a significant source of storm water pollution, due to the use of materials and wastes created that are harmful to humans and the environment. Engine repair and service (e.g. parts cleaning), replacement of fluids (e.g. oil change), and outdoor equipment storage and parking (dripping engines) can impact water quality if storm water runoff from areas with these activities occurring on them becomes polluted by a variety of contaminants.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment
Nutrients
Trash
Metals ✓
Bacteria
Oil and Grease ✓
Organics ✓
Oxygen Demanding

Pollution Prevention

- The City performs routine maintenance on its vehicles in a properly outfitted garage located at the City's Department of Public Works.

- Routine maintenance is also performed on lawn and landscape equipment. This operation occurs inside the Public Works' facility.

- NOTE: City only perform oil changes and light maintenance. City does not have a parts washer; all major repairs are sent to an auto repair shop.

E.6 Outdoor Container Storage SOP

Description	
Accidental releases of materials from above ground liquid storage tanks, drums, and dumpsters present the potential for contaminating storm water with many different pollutants. Tanks may store many potential storm water runoff pollutants, such as gasoline, aviation gas, diesel fuel, ammonia, solvents, syrups, etc. Materials spilled, leaked, or lost from storage tanks may accumulate in soils or on other surfaces and be carried away by rainfall runoff. These source controls apply to containers located outside of a building used to temporarily store liquid materials and include installing safeguards against accidental releases, installing secondary containment, conducting regular inspections, and training employees in standard operating procedures and spill cleanup techniques.	**Objectives** ▪ Cover ▪ Contain ▪ Educate ▪ Reduce/Minimize ▪ Product Substitution **Targeted Constituents** Sediment Nutrients ✓ Trash Metals ✓ Bacteria Oil and Grease ✓ Organics ✓ Oxygen Demanding ✓

Pollution Prevention

- The City does not have outdoor container storage with the exception of dumpsters. Dumpsters are covered under Waste Handling and Disposal SOP.

E.7 Outdoor Equipment Maintenance SOP

Description

Outside process equipment operations and maintenance can contaminate storm water runoff. Activities, such as grinding, painting, coating, sanding, degreasing or parts cleaning, landfills and waste piles, solid waste treatment and disposal, are examples of process operations that can lead to contamination of storm water runoff.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment ✓
Nutrients
Trash ✓
Metals ✓
Bacteria
Oil and Grease ✓
Organics ✓
Oxygen Demanding

Pollution Prevention

- The City requires these types of activities to be performed within an enclosed building in order to eliminate the potential for storm water contamination.

Protocols

- Several types of lubricating oils are used by parks, buildings, and grounds maintenance personnel. The City recognizes that these can present hazards to the environment and personnel. Oils are stored in 55 gallon drums inside the Public Works building. Other smaller amounts may be stored in quart sized containers within designated areas. When necessary for use, the smaller containers will be used to remove oil from the 55-gallon drums. Most spills would occur within a building where it is being used. Small spills would be contained and an absorbent (i.e., oil dry) would be used for cleanup. Residual oil from a spill would be mopped up using a cleaning solution. The contaminated absorbent would be placed into a plastic container and stored for appropriate disposal.

- Waste oil is stored within the Public Works building in a steel heating oil style 100-gallon tank within a plastic secondary containment. The used oil is removed by a licensed private contractor (i.e. Buck's Oil) for proper disposal. The contractor's delivery trucks are equipped with the necessary materials to contain and clean up potential spills. The contracted firm's response plan deals directly with the protection of waterways and drains.

E.8 Outdoor Storage of Raw Materials SOP

Description

Raw materials, by-products, finished products, containers, and material storage areas exposed to rain and/or runoff can pollute storm water. Storm water can become contaminated when materials wash off or dissolve into water or are added to runoff by spills and leaks. Improper storage of these materials can result in accidental spills and the release of materials. To prevent or reduce the discharge of pollutants to storm water from material delivery and storage, pollution prevention and source control measures, such as minimizing the storage of hazardous materials on-site, enclosing or covering materials, storing materials in a designated area, installing secondary containment, conducting regular inspections, preventing storm water run-on and runoff, and training employees and subcontractors must be implemented.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment ✓
Nutrients ✓
Trash ✓
Metals
Bacteria
Oil and Grease ✓
Organics ✓
Oxygen Demanding ✓

Pollution Prevention

- The following materials are stored outside:
  - Sand
  - Pea Stone
  - 22X Slag
  - 1" x 3" Crushed Concrete
  - 6A Crushed Concrete

- The following materials are stored indoors:
  - Bituminous "Cold Patch"

- Catch basins that could be potentially impacted by the materials are properly screened to prevent any materials to enter the structure or waterway.
- Outdoor storage of raw materials is limited to the containment area at the DPW and shown on the DPW map in Appendix A. All other materials are appropriately stored inside the building for point of use.
- For the DPW, two (2) catch basins adjacent to the containment area are fitted with a catch basin insert such as ENPAC "Storm Sentinel".
- Insert is cleaned/ emptied per manufacturer's recommendation or as determined by visual inspection. Visual inspections are conducted at least quarterly.

E.9 Waste Handling & Disposal (Solid Waste) SOP

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter storm water runoff. The discharge of pollutants to storm water from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, re-use, and recycling; and preventing run-on and runoff.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment ✓
Nutrients ✓
Trash ✓
Metals ✓
Bacteria ✓
Oil and Grease ✓
Organics ✓
Oxygen Demanding ✓

Pollution Prevention

- Dumpsters are inspected on a regular basis; trash receptacles at the park facilities are emptied and inspected on a daily basis, replacement is necessary when the receptacle may have a leak or other damage.

Protocols

- Covered trash or waste storage containers with leak proof lids are used and supplied by Grainger or other local vendors.

- Storage containers are checked weekly for leaks and to ensure that lids are on tightly. Any that are leaking, damaged or otherwise deteriorating are replaced.

- Storage areas are swept and cleaned regularly. In paved areas, a hose is not used to clean the area to avoid runoff to a storm drain.

- Waste from damaged containers is transferred into safe containers and the damaged container is scheduled for replacement.

- Special care is taken when loading or unloading wastes to minimize losses.

Controlling Litter

- Both "No Littering" and "No Dumping" signs are posted throughout the City parks and facilities. The City enforces anti-litter laws.

- A sufficient number of litter receptacles are used for each facility.

- Pets and associated waste are prohibited at park facilities with required signage and strict enforcement by Center Line Department of Public Safety.

E.10 Building & Grounds Maintenance SOP

Description

Storm water runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, and abnormal pH. The following protocols will prevent or reduce the discharge of pollutants to storm water from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the storm water collection system.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment ✓
Nutrients ✓
Trash ✓
Metals ✓
Bacteria ✓
Oil and Grease ✓
Organics ✓
Oxygen Demanding ✓

Pollution Prevention

- The City uses safe alternative products when possible (see E.12 Safer Alternative Products).

- Proper lawn management and landscaping is practiced, including the use of native vegetation.

Protocols

Landscaping Activities

- Chemicals (insecticide, herbicide, or fertilizer) are not applied directly to surface waters, unless the application is approved and permitted by the State.

- Mulch is used as a control measure on exposed soils.

- The City Hall, DPW, Library and Gazebo have lawn irrigation systems. Irrigation schedules are set for early morning (i.e. before 6:00 AM) so pesticides applied during the work day will not be washed away and to minimize non-storm water discharge.

- Temporarily stockpiled material is stored inside the maintenance facility away from watercourses and drain inlets.

- Grass clippings that fall on sidewalks during mowing are blown back on to the mowed area, other grass clippings are left on the mowed area to mulch.

- The least toxic chemical control will be selected and purchased by the contractor and required by contract language. If a biological or alternative control is available,

it will be selected as a first option.

- Chemical controls, such as pesticides and herbicides, are applied by certified applicators that are certified by the State of Michigan as an applicator in the applicable category.

Building Repair, Remodeling, and Construction

- The City uses ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly disposes of collected material daily.

- The cleaning of paint brushes and tools covered with water-based paints are conducted in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water- based paints, finishes, or other materials are cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.

Inspection

- Irrigation systems are inspected biannually (i.e. twice per year) by a licensed contractor (i.e. T&A Sprinklers) to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering, and repair leaks in the irrigation system as soon as they are observed.

E.11 Parking Lot Maintenance SOP

Description

Parking lots can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through storm water runoff or non-storm water discharges.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment ✓
Nutrients ✓
Trash ✓
Metals ✓
Bacteria ✓
Oil and Grease ✓
Organics ✓
Oxygen Demanding ✓

Pollution Prevention

- The City performs minor parking lot maintenance services. Major repairs are contracted out to professional parking lot maintenance firms.

- The City sweeps City facility parking lots once per month seasonally during spring, summer and fall and at least quarterly using the City's Elgin Pelican sweeper.

Protocols

- The parking lots are kept clean and orderly. Debris is removed during monthly sweeping or as encountered.

- An adequate number of litter receptacles are provided at all City facilities.

Surface Repair

- Pre-heat, transfer or load hot bituminous material away from storm drain inlets.

- Parking lot repair using concrete, asphalt, and seal coat is conducting during dry weather to prevent contamination from contacting storm water runoff.

- Nearby storm drain inlets and manholes are covered and sealed with waterproof material or mesh before applying seal coat, slurry seal, etc., where applicable. Covers are left in place until the job is complete and until all water from emulsified oil sealants has drained or evaporated.

- The DPW personnel and other appropriate City staff are trained on storm water pollution prevention practices, parking lot sweeping and catch basin maintenance is covered as part of the training.

Parking Lot Cleaning/Sweeping

- Parking lot cleaning and sweeping is completed with the City's Elgin Pelican street sweeper (See Attached Spec Sheet). Areas inaccessible to the sweeper are addressed by DPW personnel with brooms.

- Waste generated from the cleaning activities will be transported to the DPW to separate the solid/liquid waste. The liquid is decanted to the City's sanitary sewer system. Street and parking lot sweepings are temporarily stored in the two GFL Environmental dumpsters (one – 10 Cyd and one – 20 Cyd) prior to subsequent transportation to a sanitary landfill as documented on a Non-Hazardous Manifest. Final disposal is performed at an appropriately licensed facility.

- Should the above option not be available, the waste will be collected into a Vactor truck and treated as waste under Parts 115 or Part 121 Solid Waste Management of NREPA.

Sweep System–Power

Engine
Make John Deere 4045 Tier 4 Final
Type 4 cylinder diesel
Displacement 276 cu in (4.5 L)
Bore 4.19 in (106.43 mm)
Stroke 5.0 in (127 mm)
Compression ratio 19:1
Horsepower 74 HP (55 kw) @ 2,400 RPM
Torque 224 ft-lbs (304 Nm) @ 1,600 RPM
Fuel tank capacity 35 gal (132.5 L)

Standard Accessories
Full flow oil filter, mechanical governor, dual safety element dry-type air cleaner with in-cab restriction indicator, fuel filter, counterbalanced, wet sleeve

Instrumentation
Panel Full vision, illuminated
Gauges Speedometer/odometer, tachometer, engine hour meter, engine temperature, oil pressure, voltmeter, fuel, hydraulic oil temperature, water fill, and on-board diagnostics.

Electrical System
Wires Hot stamped and color coded wiring, alternator/regulator-unitized, 95 A
Battery 12 volt, group 31, 925 CCA, 180 min. reserve.
Lights Halogen sealed multiple beam headlights, combination stop and tail lights, adjustable side broom lights, directional signals with hazard switch. Safety horn, electronic back up alarm, sweep flashers.

Sweep System–Components

General Specifications
Wheel base 127.4 in (3236 mm)
Overall length 16 ft (4877 mm)
Height with cab 9 ft 10.5 in (3010 mm)
Width outside tires 8 ft 6 in (2591 mm)
Curb to curb turning radius 15 ft (4572 mm)
Sweeping path:
One side broom 8 ft (2438 mm)
Two side brooms 10 ft (3048 mm)
Weight:
One side broom 13,590 lbs (6170 kg)
Two side brooms 14,290 lbs (6482 kg)
Travel speed Up to 20 mph (32 Km/h)
Hydrostatic drive Single foot pedal for forward/reverse
Hydraulic Service Brakes
Tires:
Front 11R22.5 load range H (2)
Rear 215/ 75R 17.5 load range H (2)
Wheels:
Front Steel disk type
Rear Dual steel disk type mounted on alloy steel axle
Guide wheel with rear swing-arm suspension

Cab
Type ISO mounted
Structural steel tube frame
Sealed w/ 100% filtered air intake, sound insulated
Doors Full view glass
Opening From rear
Dust protection Rubber gasket sealed
Windows Safety glass with tinted windshield and tinted sun visors, 360° visibility
Tinted upper glass
Dome light
Heater pressurizer with defroster Multi-vent air disbursement
Windshield wipers 2 speed intermittent, with washers
Mirrors Inside (1); outside, dual west coast with convex inserts and (2) 10 in oval
Seat(s) 21 in wide deluxe foam cushion with belt(s)
Steering Tilt and telescoping steering column
In- Cab Air Conditioning

Main Broom
Diameter 35 in (889 mm)
Length 66 in (1676 mm)
Type Prefab. disposable, polypropylene double wrapped at both ends
Core Steel reversible
Digging pressure & wear control in cab Hydraulic float
Lift control In-cab hydraulic raise and lower
Drive Hydraulic motor
Mounting Hydraulic cylinder suspended
Speed Variable with engine RPM

Side Broom
Type Vertical digger
Diameter 36 in (914 mm)
Disc construction Steel plate
Speed Variable with engine RPM
Flexibility In-cab positioning hydraulic float
Drive Hydraulic motor
Mounting Free floating
Adjustment In/out (recoil spring), up/down
Digging pressure/wear control
Hydraulic, in cab, pressure sensing
Broom material Tempered steel wire

Conveyor
Type Chevron cleat reinforced rubber belt
Speed Variable with engine RPM
Flexibility 9 in (229 mm) oscillation for large object passage
Drive Hydraulic motor, chain and sprocket drive
Bearings Sealed self-aligning, re-lube

Debris Hopper
Capacity volumetric 3.6 yd^3 (2.8 m^3)
Material volume 3.5 yd^3 (2.6 m^3)
Hopper lift and dump control Electro-hydraulic in-cab
Maximum dump height Up to 9 ft 6 in (2895 mm)
Time to tilt hopper 17 sec
Time to retract to working position 21 sec
Design lift capacity 9,000 lbs (4,080 kg)
Frontal dumping Standard

Hydraulic System
Hydrostatic drive Electronically controlled
Variable displacement pump
Variable displacement motor
Fittings 'O' ring face seal type
Reservoir capacity 33 gal (106 L)
Reservoir level Externally readable
Inlet strainer 100 mesh
Filter Return 10 micron absolute, full flow
Filter restriction indicator In cab
Breather/fill cap 10 micron

Water Spray System
Tank construction Polyethylene
Tank capacity 220 gal (832 L)
Fill hose 16 ft 8 in (5080 mm) with hydrant coupling
Wash down Integral cascade hopper/ conveyor wash
Pump Diagram with run dry capability
Spray nozzles Atomizing, adjacent to each broom
Controls On/off, volume high/low in-cab
Filter Non-corrosive housing, 100 mesh screen
Cleanable anti-siphon fill standard

Brake System
Service Multi caliper disc type
Hydraulically applied
Power assisted
Park Wet disc multi pack with spring applied hydraulically released push/pull activation
Interlock to prevent drive through if applied

EcoInfused Technology® Combining science and innovation to produce more environmentally efficient products.

Available Enhancements
- Dual controls - right and left side brooms, seats, and operator controls for operation from either side
- Remote adjustment
- Heated mirrors
- Side broom tilt
- Automatic lubrication system
- Lifeliner® hopper liner
- Beacon light with protector
- Strobe light with protector
- Electric side broom tilt indicator
- Broom hours and mileage recorder
- Diesel cold weather start aid
- Limb guards
- Extended warranty
- Sliding rear window
- Air suspension seat(s)
- Conveyor, lower roller washout

Finish
Undercarriage:
Grey powder coat
Body:
High gloss powder coat
Custom colors available

Chassis
Chassis is fully welded; formed channel and boxed tube style with jack points

Warranty
Sweeper
1 year parts and labor

Engine
Consult factory

Your Elgin Dealer is:

Elgin Sweeper Company
1300 W. Bartlett Rd.
Elgin, Illinois, U.S.A. 60120-7529
847-741-5370 Phone
847-742-3035 Fax
www.elginsweeper.com

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Federal Signal Corporation is listed on the NYSE by the symbol FSS

Effective 04/18
Specifications subject to change without notice.
P/N 0705393-C

Pelican P with EcoInfused® Technology 3 Wheel Broom Sweeper

E.12 Safer Alternative Products SOP

Description

Using less harmful products is important. Alternatives exist for most product classes including chemical fertilizers, pesticides, cleaning solutions, janitorial chemicals, automotive and paint products, and consumables (batteries, etc.). Fluorescent lamps (i.e. CFL's, bulbs and tubes) have been completely replaced in City facilities including street lighting.

Objectives

- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment
Nutrients ✓
Trash
Metals ✓
Bacteria
Oil and Grease ✓
Organics ✓
Oxygen Demanding

Pollution Prevention

- The City utilizes a variety of vendors general cleaning supplies (degreaser, window cleaners, etc.). The City utilizes Green Seal certified products as much as possible.

- In the case of pesticides and herbicides, the least toxic chemical control will be selected and purchased. If a biological or alternative control is available, it will be selected as a first option.

E.13 Road and Street Maintenance SOP

Description

Streets, roads, and highways are significant sources of pollutants in storm water discharges, and operation and maintenance (O&M) practices, if not conducted properly, can contribute to the problem. Storm water pollution from roadway and bridge maintenance should be addressed on a site-specific basis.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment ✓
Nutrients
Trash ✓
Metals ✓
Bacteria
Oil and Grease ✓
Organics ✓
Oxygen Demanding ✓

Pollution Prevention

- The City has jurisdictional control over the major local and local public roadways within its boundaries. Maintenance and administration of specified Mile Roads within the City are the function of the Macomb County Department of Roads (MCDR) and Van Dyke (M-53) and I-696 Service Drive are under the Michigan Department of Transportation (MDOT).

  The City provides maintenance to include street sweeping and catch basin cleaning activities for the City administered roads (Act 51).

  The City initiates monthly city-wide street sweeping using the City's Elgin Pelican sweeper in March or April as soon as seasonally practical which continues until the fall leaves collection is completed.

  Catch basins are cleaned as-needed to meet the criteria in SOP E.15 which are tracked on a Center Line DPW Daily Log Sheet (See SWMP Appendix E).

  The City's SAW Grant 1412-01 Storm Sewer CCTV Investigation project included catch basin and catch basin lead cleaning for inspection for the storm sewer system inventory and assessment. Catch basin cleaning and heavy cleaning of leads was tracked and included in the GIS mapping (See MS4 System Cleaning Map in Appendix A). Catch basin cleaning and storm sewers/leads that are cleaned with DPW Vactor are tracked via the Daily Log Sheets and incorporated into the GIS schema by DPW personnel. The tracking is used to prioritize and schedule cleaning

  The other named agencies are responsible for implementing the appropriate storm water pollution prevention protocols in maintaining their facilities located within the City.

E.14 Salt Application and Storage SOP

Description

The application and storage of deicing materials, most commonly salts such as sodium chloride, can lead to water quality problems for surrounding areas. Salts, gravel, sand, and other materials are applied to highways and roads to reduce the amount of ice during winter storm events.

Salts lowers the melting point of ice, allowing roadways to stay free of ice buildup during cold winters. Sand and gravel may increase traction on the road, making travel safer however the City has determined that the sewer system maintenance offsets the potential benefits.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	
Organics	✓
Oxygen Demanding	✓

During road salt application, certain best management practices can produce significant environmental benefits. The amount of road salt applied should be regulated to prevent over-salting of motorways and increasing runoff concentrations. The amount of salt applied should be varied to reflect site-specific characteristics, such as road width and design, traffic concentration, and proximity to surface waters. Calibration devices for spreaders in trucks aid maintenance workers in the proper application of road salts. Alternative materials, may be considered for use in especially sensitive areas if encountered within the City.

Pollution Prevention

- The City provides snow removal and salt major local and local roads, City owned facilities' parking lots and sidewalks at City facilities.
- The City uses the minimum amount of salt needed to get the job done. During application the lead truck distributes salt which is observed by a second plow truck. The salt distribution is adjusted based on the visual observation as the work progresses.
- Surface Temperatures are considered when determining volume of salt to apply.

Protocols

- The City uses both a truck mounted applicator and a hand-operated applicator. The truck applicator is calibrated according to manufacturer's recommendations in the beginning of the season, and it is adjusted according to weather conditions.
- Snow is also manually removed from driveways, parking areas and sidewalks at City facilities.
- Bulk salt is trucked in by gravel train and loaded directly into the covered salt storage facility at the DPW yard. The salt used for sidewalks is purchased bagged and is stored inside to prevent loss due to runoff or weathering of the bags.

E.15 Drainage System Maintenance SOP

Description

As a consequence of its function, the storm water conveyance system collects and transports urban runoff that may contain certain pollutants. Maintaining catch basins, storm water inlets, and other storm water conveyance structures on a regular basis will remove pollutants, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Objectives

- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment ✓
Nutrients ✓
Trash ✓
Metals ✓
Bacteria ✓
Oil and Grease ✓
Organics ✓
Oxygen Demanding ✓

Pollution Prevention

- Public Works maintains parking lots at City facilities.

- Inspection of the system and structures is conducted semi-annually during regular maintenance of the surrounding areas.

Protocols

- Municipal staff regularly inspect facilities to ensure the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins are cleaned as needed to meet this standard.
  - Stenciling of catch basins and inlets is not conducted in the City.

- Catch basins are inspected and are cleaned on an as-needed basis.

- During routine maintenance of conveyance system and drainage structures field staff looks for evidence of illegal discharges or illicit connections:

  - Evidence of spills such as paints, discoloring, etc.

  - Are there any odors associated with the drainage system

  - Record locations of apparent illegal discharges/illicit connections

  - Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of up gradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection which is addressed under the City's IDEP Program (See SWMP Appendix C).

- Storm drainage structure covers are replaced with "Dump No Waste. Drains to Waterways" annotated castings during pavement replacement and annual patching programs where applicable, to prevent illegal disposal of pollutants.

Procedures

- The following procedures will be applied in order to properly deal with the waste stream generated from catch basin cleaning activities:

  - The vactor waste will be transported to the DPW yard to separate the solid/liquid waste. Water from the vactor is decanted to a designated sanitary manhole at the DPW yard. The solids are then loaded into the two GFL Environmental dumpsters (one – 10 Cyd and one – 20 Cyd) for storage and subsequent transportation to a sanitary landfill as documented on a Non-Hazardous Manifest. For sanitary sewers the solids disposal is performed at the Warren wastewater treatment plant (WWTP).

- Should the above method be unavailable, the following described method would be used as long as there are no discharges to surface waters during dry weather conditions:

  - A visual inspection would be conducted to ensure the water in the sump has not been contaminated. If necessary, a grab sample of the water would be collected and inspected for signs of contamination such as visible sheen, discoloration, obvious odor, etc. If there is any doubt of the quality of the water, it will be collected into a Vactor truck and treated as waste under Part 115 or Part 121 Solid Waste Management of NREPA.

  - Using a sump pump, or other pumping mechanism, the majority of water in the sump of the basin would be removed without disturbing the solid material below. Pumps connected to the Vactor truck's holding tank would not be utilized.

  - The clear water would then be directly discharged to one of the following:

    - The City's sanitary system manhole.

    - Back into the storm sewer system as long as it is contained within the system during dry weather condition to ensure no discharge into surface water

    - The remaining liquid/solid in the sump would be collected with a Vactor truck and disposed of off-site in accordance with Parts 115 or 121.

- The City does not currently have any detention ponds for their properties however, the following procedures will be applied with regard to storm water detention ponds:

  - Inlet pipes and outlet pipes will be inspected for structural integrity semi-annually.

- Riprap at the inlet pipes will be inspected semi-annually. It will be replaced when the riprap is clogged with sediment and debris.

- Routine inspections for trash or other debris that may be blocking the inlet or outlet pipes or emergency spillway will be conducted monthly during the spring, summer, and fall months. Trash and debris will be removed from the basin.

- Inspection for sediment accumulation at the inlet pipes will be conducted semi-annually, and cleaned out so as to maintain flow capacity. Accumulated sediment will be removed with a shovel and wheelbarrow if it is blocking water flow. Small amounts of removed sediment can be spread evenly on upland areas and seeded with natural vegetation.

- Inspection of the stone around the riser/standpipe (outlet pipe) will be conducted semi-annually. If stone has accumulated sediment, vegetation and/or debris to an extent that water is not flowing through the stone and out of the pond as originally designed, then the stone will be replaced.

▪ The following procedures will be applied with regard to vegetated swales:

- Inspect structural and vegetative components annually and after major runoff events. If standing water is observed on the surface 48 hours after a runoff event, till or de-thatch the bottom to restore porosity.

- Seasonal mowing is performed to prevent noxious weeds and woody vegetation from being established.

- Remove sediment accumulations when depth exceeds three (3) inches

E.16 Water & Sewer Utility Maintenance SOP

Description

Although the operation and maintenance of public utilities are not considered chronic sources of storm water pollution, some activities and accidents can result in the discharge of pollutants that can pose a threat to both human health and the quality of receiving waters if they enter the storm drain system. Sewage incident response and investigation may involve a coordinated effort between staff from a number of different departments/agencies.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	
Bacteria	✓
Oil and Grease	✓
Organics	✓
Oxygen Demanding	✓

Pollution Prevention

The City owns and maintains the sanitary collection system and pump stations. The City has a regular program of system maintenance. All mains in the system are televised and cleaned over a 10-year period. Suspected leaks are televised and repaired using various methods including open cut repair, sectional or full-length CIPP lining.

The City maintains specific overflow control facilities in conjunction with the Stephens Sanitary Pump Station including an electrically actuated SSO control gate valve which discharges to a Parshall Flume Chamber under Stephens east of Van Dyke. These facilities, required maintenance, monitoring, and reporting are currently in compliance with the City's Administrative Consent Order AFO-SW07-001 with the Michigan Department of Environmental Quality (MDEQ).

E.17 Reporting and Recordkeeping SOP

As applicable, the City maintains records demonstrating successful implementation of SOPs. Recordkeeping may include training, site inspection and maintenance, and if applicable, monitoring. It is anticipated that site inspections will occur on a quarterly basis or as otherwise required under the City's MS4 permit and Action Plan (Appendix F).

The City is required under the Phase II General NDPES Permit, to submit progress reports to the MDEQ on November 1 of every other year, or as otherwise required.
Specific reporting requirements will include:

- Program implementation status.
- Summary of storm water activities performed.
- Results of information collected, such as monitoring data.
- Summary of proposed storm water activities for the next reporting cycle.
- Changes made in BMP selection.
- Changes in storm water management personnel.
- Changes made in program or measurable goals.

POLLUTION INCIDENT PREVENTION PLAN
AEW No. 0170-0382

For

City of Center Line
Department of Public Works
6685 East Ten Mile Road
Center Line, Michigan 48015
Telephone: (586) 756-4502
(Location map / site plan are attached)

PRIMARY EMERGENCY COORDINATOR
Gary McKinney, DPW Superintendent
(586) 756-4502
(586) 709-6942 mobile
gmckinney@centerline.gov

ALTERNATE EMERGENCY COORDINATOR
Lori Lambert, DPW
(586) 756-4502
llambert@centerline.gov

****
IN CASE OF EMERGENCY CALL THE
DEQ POLLUTION EMERGENCY ALERTING
SYSTEM (PEAS) 1-800-292-4706
****

GENERAL INFORMATION

The Department of Public Works Garage is a municipal maintenance facility owned and operated by the City of Center Line. This PIPP is written to include the salt stockpile storage area, which is necessary to apply to city roadways during the winter for public safety. A site plan showing the salt storage areas, nearby drainage and other site details are attached to this Plan.

PHYSICAL DESCRIPTION OF THE FACILITY

The City's salt stockpile is stored in a separate covered structure within the DPW garage facility. The storage structure is made of block approximately five feet high, covered with an arched canvas dome. The structure is enclosed on all four sides, with the exception of the access on the south side, used for loading and unloading the salt. For security and safety reasons, this facility is entirely enclosed by a fence. During off duty hours the gate is closed and locked.

EMERGENCY EQUIPMENT

This facility will be maintained and operated to minimize the possibility of a release of polluting materials. The following communications, spill control and clean up equipment are available on site in case of an emergency. This equipment will be inspected and maintained as necessary to assure its proper operation if a pollution incident should occur.

Description Testing/Maintenance

1. Telephone/Intercom Test as needed
2. Two Way Radio Maintenance as required
3. Water hose
4. Absorbent Material Replenish supply as needed
5. Hand Shovels

POLLUTING MATERIALS STORED OR USED AT THIS FACILITY

The material currently stored or used at the DPW Facility, in a quantity that has the potential of causing environmental damage in the event of accidental spills or leakage, is salt. During non-winter months, an average of 50 to 75 tons of salt is stored on site. As winter approaches, the amount of salt is increased to approximately 100 tons. Complete information regarding the physical properties, chemical names and required safety precautions can be found in the Safety Data Sheets (SDS) posted at this facility.

The following steps will be taken to prevent spills and promote good housekeeping:

1. Employee training every five years on spill prevention and cleanup, new employees trained before operating equipment.
2. Regular inspections of site looking for any signs of releases.
3. PIPP put in place to minimize spills while loading/unloading.
4. Place solid covers on nearby catch basins prior to loading/unloading.
5. Minor spills will be contained and cleaned up. Soak up liquids with absorbents like clay or sand. If no free liquid put in trash if approved by waste disposal company. Sweep up/scrape spilled salt and use for deicing.
6. Large spills and/or road accidents where materials got into water, follow pollution incident response procedures. Emergency Coordinator will report salt spills over 50 pounds or 50 gallons of brine onto the ground or into water: Call Macomb County Health

Department, Macomb County Office of Public Works, MDEQ PEAS and 911 as required by Part 5 rules.

POLLUTION INCIDENT RESPONSE

If a spill or leak of salt occurs, the following emergency response action should be taken. The emergency response coordinator and alternates should become familiar with these steps.

1. Assess the situation; follow all health and safety precautions warranted by the material and circumstances.

2. If there is reason to believe that the release of polluting material threatens the health or safety of employees or of surrounding residents or properties, evacuate the facility, notify the local emergency response agencies listed in this plan and follow their instructions.

3. If there is reason to believe that the polluting material has or may reach the waters of this state via the drains, sewers, surface runoff or soils at the facility, immediately contact the DEQ Pollution Emergency Alerting System (PEAS) at the number on the front of this plan. Follow their instructions for containing or cleaning up the material.

4. Take steps to minimize the release of polluting material to the environment. This can include but is in no way limited to the following measures:

   a. DO NOT FLUSH WITH WATER UNLESS DIRECTED TO DO SO.
   b. Take necessary steps to stop the release.
   c. Dike or absorb the material using sand or other material.
   d. Plug drainage inlets/outlets.
   e. Redirect flows to a holding area.
   f. Excavate contaminated soils, if necessary.

5. Clean up all contaminated material. Clean out catch basins, tanks or basins contaminated by the material. Excavate contaminated soils or absorbent material. Follow instructions given by DEQ environmental staff for final clean up action.

6. Properly store, label and document the wastes for disposal.

7. Make arrangements for disposal of waste material.

8. Clean and service all emergency equipment. Replenish supplies of absorbent material, etc. Recommend and perform maintenance on containment systems.

9. Record and document a full account of the incident including date, time, volume, material and response taken.

10. If the DEQ PEAS staff has not been notified, do so within 10 days of the incident with the following information:
    a. Facility name and location.
    b. Description and volume of material involved.
    c. Time and date of spill or leak.
    d. Assessment of damage and response taken.
    e. Remedial action planned or assistance needed.

11. Review PIPP for changes needed to make it more effective.

If a spill (or illegal dumping) is large or hazardous or cannot be contained on site, so that it might be released to the surface water or groundwater of the state, **it should be reported immediately by calling 911 to dispatch the Fire Department** and by calling the MDEQ at the phone numbers listed below. The Fire Department will mobilize the County Hazardous Operations Team if deemed necessary. Spills that are below the threshold reporting quantities in the state's Part 5 Rules or don't reach waters of the state, do not need to be reported to the MDEQ. During regular business hours, the MDEQ district office in Warren should be called at: (586) 753-3700. During non-business hours call the Pollution Emergency Alert System (PEAS) at 1-800-292-4706. If the spill might reach navigable waters, the Coast Guard will also be called at: (313) 568-9524.

Small Spill Response Procedure

Small spills are characterized as spills consisting of less than 5 gallons of oil, fuel, or low hazard chemicals.

1. Make sure area is safe for entry and the spill does not pose an immediate threat to health or safety of responders.

2. If safe, stop source of spill (plug hole, upright the container, shut off valve).

3. Check for hazards (flammable material, noxious fumes, cause of spill). If flammable liquid is spilled, turn off engines and (nearby electrical equipment). **If serious hazards are present leave the area and call 911.** When in doubt consult the Safety Data Sheets for hazards of chemicals.

4. Block the nearest storm drain (use absorbent or other material as necessary, close valve to drain, cover or plug drain).

5. Notify Supervisor.

6. If spilled material has entered a storm sewer or drain contact: **The Public Works Superintendent at (586) 756-4502.** If he/ she is not available and the spill might be released to a stream or county drain or groundwater, call 911 to dispatch the Fire Department and call the MDEQ at (586) 753-3700 or 1-800-292-4706 (the Pollution Emergency Alert System - PEAS).

7. Clean up spilled material with absorbent pads and floor dry **(do not flush with water).**

8. Dispose of cleaned material/absorbent pads in a secure container for proper disposal.

9. Make sure area is not slippery (if slippery, put down no-slip material).

10. Complete a Spill Reporting Form.

Suggested spill response equipment includes the following:

• 20 lb floor dry

• Shovel

• Broom

• Caution Tape

• Absorbent Boom

• Absorbent Pads

• Container for clean-up 30 gal

• Sample Bottles

Medium Spill Response Procedure

Medium spills are characterized as spills consisting of 5 to 10 gallons of oil, fuel or of low hazardous chemicals.

1. Make sure area is safe for entry and the spill does not pose an immediate threat to health or safety of responders.

2. If safe, stop source of spill (plug hole, upright the container, shut off valve).

3. Check for hazards (flammable material, noxious fumes, cause of spill). If flammable liquid is spilled, turn off engines and nearby electrical equipment. **If serious hazards are present leave the area and call 911.** When in doubt consult the Safety Data Sheets for hazards of chemicals.

4. Block the nearest storm drain (use absorbent or other material as necessary, close valve to drain, cover or plug drain).

5. Call co-workers and Supervisor for assistance and to make them aware of the spill and potential dangers.

6. Stop spill from spreading (use absorbent or other material).

7. If spilled material has entered a storm sewer or drain contact**: The Public Works Superintendent at (586)756-4502.** If he/she is not available and the spill might be released to a county drain or stream or ground water, **call 911 to dispatch the Fire Department** and call the MDEQ at (586) 753-3700, or 1-800-292-4706 (the Pollution Emergency Alert System - PEAS). The Fire Department will notify the County Hazardous Operations Team if necessary.

8. Clean up spilled material with absorbent pads and floor dry **(do not flush with water).**

9. Dispose of cleaned material/absorbent pads in a secure container for proper disposal.

10. Make sure area is not slippery (if slippery, put down no-slip material).

11. If municipal employees are unable to properly contain and clean up the spill (i.e., large or hazardous spills) contact a supervisor immediately. If he/she is not available and the situation requires immediate response, call contractor EQ of Detroit for containment and clean-up at 24-hour Hotline: (800) 495-6059.

12. Complete a Spill Reporting Form. Send to MDEQ if necessary.

Suggested spill response equipment includes the following:

• 20 lb. floor dry

• Shovel

• Broom

• Caution Tape

• 2 Absorbent Booms

• 20 Absorbent Pads

• Container for clean-up 30 gal

• Sample Bottles

<u>Large Spill Response Procedure</u>

Large spills are characterized as spills consisting of greater than 10 gallons of oil, fuel or the release of hazardous chemicals.

1. Make sure area is safe for entry and the spill does not pose an immediate threat to health or safety of responders.

2. If safe, stop source of spill (plug hole, upright the container, shut off valve).

3. Check for hazards (flammable material, noxious fumes, cause of spill). If flammable materials are **present leave the area and call 911.** When in doubt consult the Safety Data Sheets for hazards of chemicals.

4. Block the nearest storm drain (use absorbent or other material as necessary, close valve to drain, cover or plug drain).

5. Call co-workers and Supervisor for assistance and to make them aware of the spill and potential dangers. Have Supervisor notify Fire Department and Sheriff's Dept. of spill and possible lane closures and need for assistance. The Fire Department will notify the County Hazardous Operations Team if necessary.

6. Stop spill from spreading (use absorbent or diking material such as sand, dirt, etc.)

7. If spilled material has entered a storm sewer or drain contact: **The Public Works Superintendent at (586) 756-4502.** If a Supervisor is not available and the spill might be released to a county drain or stream or ground water, **call 911 to dispatch the Fire Department** and call the MDEQ at (586) 753-3700, or 1-800-292-4706 (the Pollution Emergency Alert System - PEAS). **LARGE SPILLS ARE LIKELY TO PRESENT A SERIOUS HAZARD AND MAY REQUIRE SPILL RESPONSE SERVICES FOR CONTAINMENT AND CLEAN-UP FROM A CONTRACTOR SUCH AS EQ of DETROIT at 24-HOUR HOTLINE: (800) 495-6059.**

8. If possible, clean up spilled material with absorbent pads and floor dry **(do not flush with water).**

9. Dispose of cleaned material/absorbent pads in a secure container for proper disposal.

10. Make sure area is not slippery (if slippery, put down no-slip material)

Complete a Spill Reporting Form. If there was a release to waters of the state of any polluting material in excess of the threshold reporting quantities in Part 5 Rules the Spill Reporting Form should be sent to the MDEQ.

The City of Center Line will track the status of each suspicious discharge that has been identified. Tracking will consist of a dated log of activities that have been performed to locate the source(s) of the problem. Once a source has been identified, the property owner will be notified within (48) Hours of discovery.

The City's goal is to have each illicit connection or illegal spill/dumping corrected within ninety (90) days of notification to the property owner, if a sanitary sewer is readily available and the cost for correction is not prohibitive for the property owner. However, if more complicated solutions are required, the City will set up a schedule for correction with each individual property owner. After the ninety (90) days of notification, or approved target date, the City will recheck and possibly dye test the outfall to ensure that the corrections have been made.

EMERGENCY RESPONSE AGENCIES

POLICE
City of Center Line Public Safety Dept - 911

FIRE
City of Center Line Public Safety Dept - 911

AMBULANCE
City of Center Line Public Safety Dept – 911
(Universal Ambulance)

MACOMB COUNTY HEALTH DEPARTMENT
43525 Elizabeth Road
Clinton Township, Mi 48043
(586) 469-5235

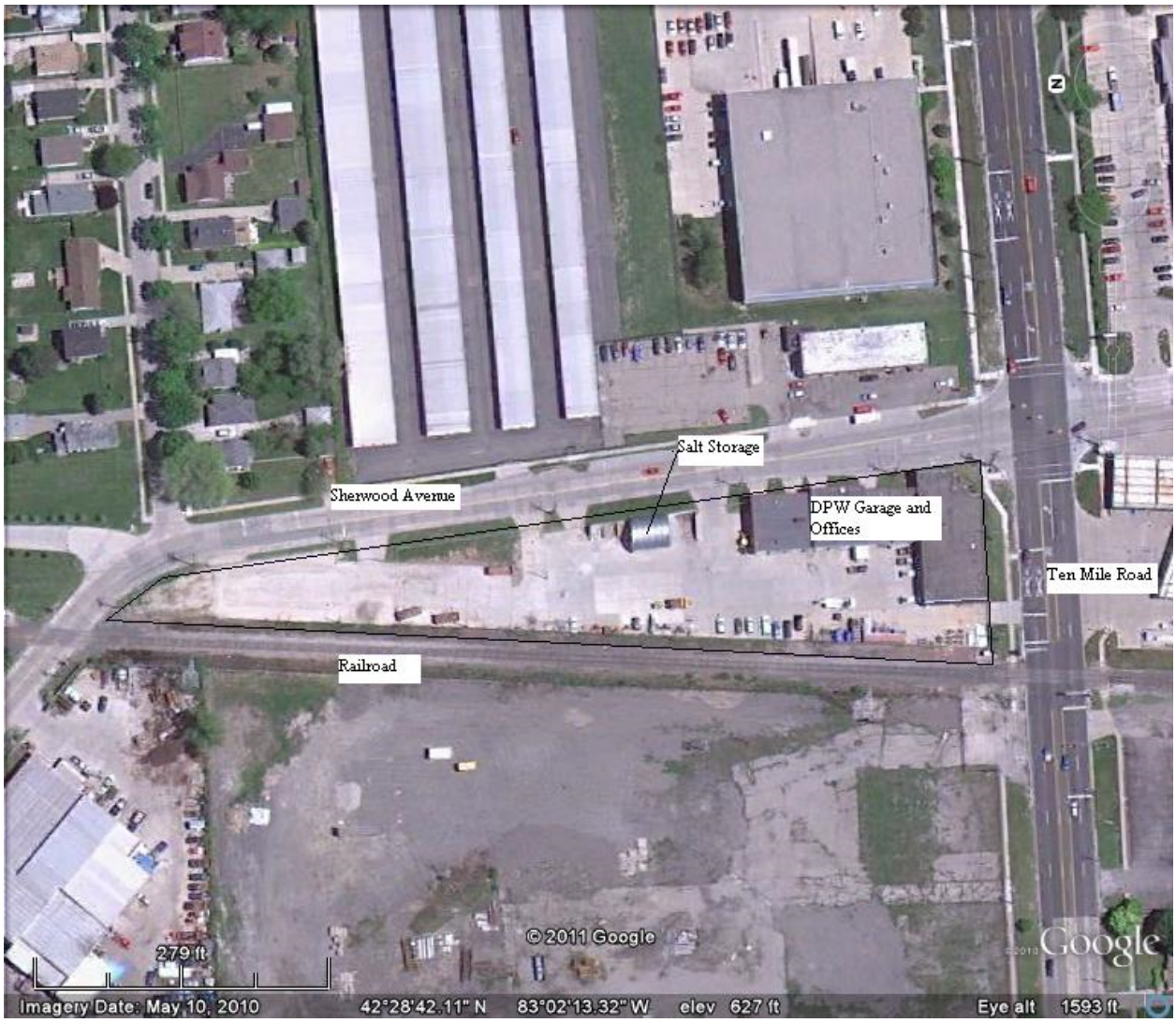
MACOMB COUNTY OFFICE OF PUBLIC WORKS
21777 Dunham
Clinton Township, MI 48036
(586) 469-5910

MDEQ LOCAL OFFICE
Southeast Michigan District
27700 Donald Court
Warren, Michigan 48092
(586) 753-3700

WASTE WATER TREATMENT PLANT
Great Lakes Water Authority Systems Control
9300 W. Jefferson Avenue, Detroit, Mi
(313) 267-6000

U.S COAST GUARD
National Response Center
(800) 424-8802

Location Map/Site Plan



City of Center Line

Storm Water Management Program (SWMP)

Appendix F

Action Plan

November 2015
Revised May 24, 2019

City of Center Line Pollution Prevention Action Plan (SWPPAP)
Table 3: City of Center Line SWMP Action Plan

City of Center Line
Storm Water Pollution Prevention Action Plan (SWPPAP)
October 2018

Michigan Individual Jurisdiction Permit Number MI0060237

CONTACT INFORMATION:
City of Center Line
Department of Public Works
6685 E. Ten Mile Road
Center Line, MI 48015
(586) 756-4502

1. Purpose

The purpose of this Storm Water Pollution Prevention Action Plan (SWPPAP) is to bring together the following storm water pollution controls for Center Line's City Municipal Separate Storm Sewer System (MS4)

- goals and actions adopted from the Red Run (R2W) Watershed Management Plan (WMP),
- actions applicable to pollution prevention and good housekeeping (P2/GH) for municipal operations to meet the NPDES Jurisdictional General permit requirements,
- new and redeveloping construction site runoff control,
- actions applicable to post construction controls for areas of significant development and redevelopment to meet the NPDES permit requirements,
- details and schedules to describe the process for implementing the program, and
- evaluation methods to demonstrate the reduction of storm water pollution to the maximum extent practicable.

The SWPPAP includes those actions expected to be implemented over the term of the permit. The City IDEP and PEP are separate components of the Storm Water Management Program however specific and related actions are included in this SWPPAP.

The City's MS4 is primarily located in the Red Run (R2W) watershed. The City's SWPPAP will cover City-owned properties in the Run Run (R2W) watershed serviced by the City's MS4.

2. Facility Assessment and Prioritization

City owned and operated facilities will be assessed for their potential to discharge pollutants to the waters of the state. Each facility will be evaluated based on the following criteria:

1. Amount of urban pollutants stored at the site (i.e. sediment, nutrients, metals, hydrocarbons, pesticides, fertilizers, herbicides, chlorides, trash bacteria, or other site-specific pollutants
2. Identification of improperly stored materials
3. Potential for polluting activities to be conducted outside (i.e. vehicle washing)
4. Proximity to water bodies
5. Poor housekeeping practices
6. Discharge of pollutants of concern to impaired waters

Based on these criteria, the potential for each facility to discharge pollutants to the waters of the state will be rated high, medium, or low. For low facilities where no assessment factors are present, catch basin cleaning and street sweeping will be performed as indicated in the applicable procedures (See SOPs in Appendix E – P2/GH) for these activities. For medium facilities, appropriate BMPs are considered based on the assessment factors present to prevent or minimize the potential for pollutants from entering surface waters of the state.

Updating/revisions of maps and inventory will be done within 30 days following adding/removing a facility or structural stormwater control.

The City also owns or maintains small lots for sanitary lift station and drinking water metering sites.

3. Municipal Inventory and Assessment

The inventory of municipal owned and operated facilities, structural controls and implemented BMPs are listed in Table 1A in Appendix A – Maps and Tables.

3a. Updates and Priority Revisions

This inventory will be updated within 30 days as facilities and structural stormwater controls are added, removed, or no longer owner or operated by the applicant. Priority level assessments will be revised within 30 days prior to discharging stormwater at a new facility, or when new the storage of materials, equipment, or vehicles changes at a facility.

4. Municipal Operations and Maintenance Activities

The City maintains City-owned parking lots, major local and local roads of their MS4. Repairs to parking lots or other municipal maintenance activities are done on an as needed basis by either the City DPW or by a licensed contractor. The City DPW owns a vactor truck and can perform cleaning of storm structures as required under this program.

The vactor is primarily used to maintain the City's sanitary sewer system however it is not used to work in the storm sewer system without appropriate cleaning and preparation prior to use (See Sewer Vactor Policy).

During cold weather operations the City applies road salt or sand as weather conditions dictate.

Vehicle maintenance and washing is conducted by DPW staff indoors at the City's DPW facility where it drains into the sanitary sewer.

The City may hire contractors for a number of operation and maintenance activities. The City will include a statement requiring contractors hired by Center Line to perform municipal operation and maintenance activities comply with all pollution prevention and good housekeeping (P2/GH) BMPs as appropriate. Contractors are provided with a "Storm Water Pollution Prevention" brochure which includes information about recommended operation and maintenance practices. A City representative is on site to oversee the work and ensure that left over material and other associated pollutants are disposed of, or stored properly at the DPW facility.

5. Catch Basin Maintenance Priority

Catch basins and other structural storm water controls that are inspected and maintained by the City will be prioritized for routine inspection, maintenance, and cleaning. The criteria for the priority levels that include low, medium, and high are defined as follows:

Low Priority – Catch basins that are of low priority have very little sediment accumulation and are serviced as needed to not exceed the "40% full criteria". Low priority catch basins are inspected on an as needed basis based on complaints or by DPW staff during normal work activities.

Medium Priority – Catch basins that are of medium priority have a higher rate of sediment accumulation and will require maintenance more frequently than low priority catch basins. Catch basins that prompt resident complaints or are subject to isolated instances where structures are plugged or damaged will be maintained and inspected by DPW as needed. At that time, it will be determined if the catch basin will require maintenance on a more frequent basis and warrants a reclassification to a medium priority rating. In the event the priority rating of a catch basin is changed, or new catch basins are constructed, this procedure will be updated and revised to reflect the change in priority within 30 days.

High Priority – Catch basins that are of high priority have a high rate of sediment accumulation and will require regular routine maintenance and inspection. These catch basins are typically located in areas where sediment is easily mobilized and transported by runoff.

Procedures will be updated/revised within 30 days following the construction or a catch basin or a change in priority level.

6. Catch Basin Inspection, Maintenance, and Cleaning

Catch basins and swales are visually inspected during normal work activities or during the activities required under the relevant standard operating procedures (See SOPs in Appendix E – P2/GH). A visual inspection of the structure will document any structural defects which may include collapse, cracking, frame damage, pipe collapse, blockage, etc. If water is evident in the swale during dry weather screening a sample will be taken to test for e-coli and be addressed per the City's IDEP.

If cleaning is deemed necessary, it is conducted using the City's vactor truck. The Vactor truck is operated according to Manufactures' operating instructions and the DPW's Sewer Vactor Policy. All solids and liquids will be removed from the structure to the extent possible. Collected sediment and water will not be discharged back into the structure at any time during the cleaning process.

Repairs will be conducted as needed based on the results visual assessments conducted by the City. Structure repairs are prioritized based on public safety concerns.

Collected material will be transported to the City's DPW facilities where it will be offloaded into a designated area for dewatering. The designated dewatering area is located behind the DPW garage where any drainage into storm structures is treated with catch basin inserts. Once the material has been dewatered, the City disposes of the material through a licensed disposal company.

7. SWPPAP Revisions

Revisions will be determined within 30 days following adding/removing a facility or structural stormwater control.

8. Construction Site Runoff Control

Center Line has drafted a Storm Water Standards Ordinance which provides Standards for Stormwater Management for Construction Site Runoff Control. These standards reflect the current Macomb County Standards. Enforcement of these standards is accomplished through site plan review by the City, or its consultants, to ensure the appropriate standards are met.

9. Post Construction Site Runoff Control

The City has drafted Storm Water Standards Ordinance which standards apply to Post Construction stormwater runoff control areas of new development and significant redevelopment in the City. In the event the City acquires or constructs new structural stormwater controls, the design of these structures will comply with these Standards. Enforcement of these standards is accomplished through site plan review by the City, or its consultants, to ensure the appropriate standards are met.

10. Retention of Records

Center Line will retain the approved SWPPAP, and its associated records, in-house for a minimum of three years after the termination of the permit. The records will be available upon request by MDEQ and shall include, but not be limited to:

- Information regarding the effectiveness of these activities;
- Records of analyses performed;
- Calibration and maintenance of instrumentation, if used; and
- Recordings from continuous monitoring instruction.

These records will be retained by the City, and submitted to MDEQ if requested.

11. Supplement to Table 3: SWPPAP Goals and Priorities

This section provides further explanation of the information contained in Table 3, to assist with the SWPPAP review and approval process. The actions contained in Table 3 are the Final SWPPAP actions recommended for the City of Center Line.

11a. Actions Committed to in the Watershed Management Plan(s)

Clarification for most actions identified in the Red Run (R2W) Watershed Management Plan had been provided through the WMP review process. The actions contained in Table 3 are the SWPPAP actions recommended for the City and incorporated in the SWMP.

Table 3 Storm Water Pollution Prevention Action Plan for Center Line documents all the actions in which the City has committed to implementing based on the recommendations.

11b. Storm Water Pollution Prevention and Good Housekeeping (P2/GH) for Municipal Operations

The actions committed to in the SWPPAP do not contain all the Jurisdictional Permit SWMP requirements under Part I.B.6. The last part of Table 3 incorporates the remaining requirements for P2/GH for Municipal operations.

Table 3 – Action Plan

Action #	Action Item	MIS040000 Jurisdictional General Permit Section (Note 1)	Method of Implementation	Partner Permittees	Schedule	Evaluation
Public Education Plan (PEP) – CRW-LSCDD PEP Table 2						
PEP #1 Topics A-J	Presentations and Displays	PartI.B.1.a.1 PartI.B.1.a.4 Part I.B.3	Provide displays and presentations for water quality-related events upon request and availability of staff time display to public at least once in the next 5 years.	CRWC	Annually	Date , time location and name of event attended
PEP #2 Topics A-K	Regional Public Education Materials	PartI.B.1.a.1 PartI.B.1.a.3 PartI.B.1.a.4 PartI.B.1.a.5 PartI.B.1.a.10	Distribute resources available from SEMCOG including: Seven Simple Steps to Clean Water brochures, tip cards and kids activity sheets. Topics include: Fertilizer, Car Care, Pet Care, Household hazardous waste disposal, earth friendly landscaping, Water Conservation and storm drain.	CRWC	Annually	Track the number and type of materials distributed
PEP #3 Topics A-K	Subwatershed Website	PartI.B.1.a.2 PartI.B.1.a.4 PartI.B.1.a.9 Part I.B.3	Hosted by CRWC website; features subwatershed map, photos, description, events and links to education resources. MS4 permittees will provide links to the CRWC website of their own websites.	CRWC	The website is in place and is continuous	Will use page counter to report number of hits
PEP #4 Topics A-K	Community Information	PartI.B.1.a.4 PartI.B.1.a.8 Part I.B.3	Write or distributes articles about watersheds, stormwater pollution personal action for publication into existing municipal newsletters, e-newsletters and websites; Four Articles per year will be given to MS4 permittees from CRWC for publication in newsletters and other publications. MS4 permittees will distribute these article to the public each year via print or digital media.	CRWC	4 articles per year one for each season	MS4 will report where and when these are published in their Biennial Progress Report

Table 3 – Action Plan

Action #	Action Item	MIS040000 Jurisdictional General Permit Section (Note 1)	Method of Implementation	Partner Permittees	Schedule	Evaluation
PEP #5 Topics A,C,G	Household Hazardous Waste Information	PartI.B.1.a.3 Part I.B.3	Continue to publicize information on the Macomb County Health Department's website: http://health.macombgov.org/Health-EnvironmentalHealth-HHWAcceptedMaterial The household hazardous waste (HHW) programs are offered to citizens and employees of Macomb County These provide safe disposal of household hazardous waste to Macomb County municipalities to the maximum extent practicable (as budget allows). Macomb County MS4 permittees will also promote. The MCHD and MCPWO will continue to distribute HHW brochures.	Macomb County	Annually	Provide working links to web sites, Report annually,
PEP #6 Topics A,G	Recreational Vehicle Waste Dumpsites	PartI.B.1.a.1 PartI.B.1.a.3	Post links and/or locations to recreational vehicle (RV) waste dumpsites in the region on Southeast Michigan Council of Government's (SEMCOG) Ours to Protect Web site at: www.semcog.org/OursToProtect_HouseholdWaste.aspx or provide a link to Michigan RV dump sites (www.rvdumps.com/mi.htm) on Oakland County Waste Resource Management Division's Web site at: www.oakgov.com/waste/.	SEMCOG	Annually	Provide working links to Web sites
PEP #7 Topics A-J	Riparian Information Distribution	PartI.B.1.a.2 PartI.B.1.a.7	"Distribute riparian landowner educational material (i.e. Waterfront Wisdom brochure) make available to their public via mailings or through their website. Events, meetings, and through mailings.	CRWC	Annually	"Number of brochures/other materials distributed

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Action #	Action Item	MIS040000 Jurisdictional General Permit Section (Note 1)	Method of Implementation	Partner Permittees	Schedule	Evaluation
Total Maximum Daily Load (TMDL)						
TMDL #1	*E. coli* Monitoring	Part I.A.2.c Part I.B.3 Part II.C.2	Based on IDEP DWS and twice per permit cycle (2nd and 4th year during Growth Season) at Municipal owned property, City Parks and at least one City Discharge Point per base map.	n/a	Biennially	Status & results will be reported biennially or as required Compliance/ Non-compliance notifications
TMDL #2	Implement SOP's and BMP's based on City review of model or recommended procedures, practices or structural controls	Part I.B.3.c	City will use the information from activity TMDL #1 to prioritize affected areas or those area that could potentially be sources of pollution.	n/a	Biennially	Priority activities will be developed and reported in biennial progress reports.
Illicit Discharge Elimination Plan (IDEP)						
IDEP #1	Policy	Part I.B.3.c	DWS and follow up per the Center Line IDEP & TMDL in Appendix C.	n/a	Based on IDEP DWS of outfalls and points of discharge	DWS activities will be reported in the biennial progress report including a summary of findings. In the event that illicit connections are discovered, the number found and corrected will be reported biennially in addition to required regulatory notification.
IDEP #2	Storm Sewer System Map	Part I.B.3.c	City will keep hard-copy drawings of City owned/operated storm sewer system in one central location at the Department of Public Works Facility	n/a	See Appendix A of SWMP	Number of new discharge points located/installed.

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Action #	Action Item	MIS040000 Jurisdictional General Permit Section (Note 1)	Method of Implementation	Partner Permittees	Schedule	Evaluation
IDEP #3	Dry Weather Screening	Part I.B.3.c	City will conduct dry weather (72 hrs. or more of no precipitation) screening on all owned/operated MS4 Discharge Points within the City. This will include visual observation of discharge points and receiving waters. If flow is observed, a field analysis for E-coli. If the source of an illicit discharge is not identified by the initial field screening, within 1 to 2 business days the City will initiate a source investigation.	n/a	20% per year	Method of prioritization and location of field screening based on priority areas.
IDEP #4	Elimination	Part I.B.3.c	City has procedures for eliminating illicit discharge, and pursuing enforcement actions, including measures for expeditious response to, and elimination of, each identified illicit discharge, spill, and emergency situations. City will track potential illicit discharges/connections and eliminations through a written log.	n/a	Based on IDEP DWS and required follow up investigations	Documented procedures. Follow-up documentation.
IDEP #5	Staff Training	Part I.B.3.c	City will implement a training program related to identifying illicit discharges/connections (IDC) for all staff that have the potential for witnessing problems or directly involved in IDEP related activities. The training program shall include recognizing IDC, source identification, methods for elimination, proper enforcement response, and other appropriate knowledge.	n/a	At least once per permit cycle and within first year of hire date.	Training documentation. Number of staff trained will be reported in biennial progress reports.

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Action #	Action Item	MIS040000 Jurisdictional General Permit Section (Note 1)	Method of Implementation	Partner Permittees	Schedule	Evaluation
IDEP #6	Effectiveness	Part I.B.3.c	IDEP effectiveness will be determined by various methods, including, number and type of staff observations, and potential illicit connections/discharges found during dry weather screening.	n/a	Biennially	Number and type of staff observations; potential illicit connections/discharges found during dry weather screening (DWS).
Post-Construction Storm Water Controls for New Development and Redevelopment Projects.						
PCSWC #1	Ordinance/ Related SOP's and Policies	Part I.B.4	City have drafted a Storm Water Standards Ordinance to meet the permit requirements. Draft standards require maintenance agreement to ensure long-term O&M measures are in place.	n/a	Draft Standards will be adopted into Code of Ordinances upon review and approval of permit application by MDEQ	Provide updated documents for review by MDEQ within the stated timeframes
Construction Storm Water Runoff Control						
CSWRC #1	Ordinance/ Related SOP's and Policies SESC Preliminary Site Plans	Part I.B.5 b. 1) - 3)	City have drafted a Storm Water Standards Ordinance to meet the permit requirements. City will not issue a building permit unless all appropriate permits are obtained.	MCPWO	Draft Standards will be adopted into Code of Ordinances upon review and approval of permit application by MDEQ	Provide updated documents for review by MDEQ within the stated timeframes
CSWRC #2	Part 91 Violation Notification	Part I.B.5 b. 1) - 3)	City will include as part of employee training what constitutes a discharge from construction activities and whom to contact within the City. Staff will be responsible for contacting Macomb County Public Works Office and the MDEQ Southeast Michigan District when a discharge has occurred.	MCPWO	Annually	Training Documentation

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Action #	Action Item	MIS040000 Jurisdictional General Permit Section (Note 1)	Method of Implementation	Partner Permittees	Schedule	Evaluation
CSWRC #3	Public Complaint	Part I.B.5 b. 1) - 3)	City will promote Macomb County "Report-a-Polluter" hotline that is available 24/7, by posting information on their website and post information at publically open City facilities	MCPWO	Annually	Number of complaints received.
Pollution Prevention & Good Housekeeping Activities for Municipal Operations						
P2GH #1	Employee Training	Part I.B.6.c Part I. B. 6. f	City will implement a training program related to good housekeeping measures and how to reduce storm water pollution.		Review of adopted SOP's along with monthly safety briefings	Training program documentation .including sign-in sheets with topics covered during briefings
P2GH #2	Contractor Training	Part I.B.6. Part I.B.6.f	City will provide relevant SOP's, policies and permit requirements with Contract Documents	n/a	As needed	At contract commencement meeting and documentation of meeting minutes.
P2GH #3	Structural Storm Water Control Inspection	Part I.B.6.a a	City will inspect all structural storm water controls at City-owned facilities on a quarterly basis.	n/a	As needed	Inspection reports.
P2GH #4	Structural Storm Water Controls Owned / Operated	Part I.B.6.a	City will include all structural controls on the maps. Currently City Lists the properties with structural controls as SWMP Appendix A, Table 1A	n/a	2018	The inventory SWMP Appendix A, Table 1A will be updated within 30 days following adding/removing a facility or structural stormwater control.
P2GH #5	MS4 Waste Removal	Part II.D.6	All waste from general operations and maintenance, such as catch basin cleaning, is disposed of using an outside contractor. This material is tested and then hauled to the appropriate location for disposal.	n/a	Annually	Load tickets/quantities of waste removed.
P2GH #6	Impervious Infrastructure Pollutant Reduction	Part I.B.6.b Part I.B.6.c	City maintains major local, local roads and parking lot using SOP's for all facilities owned by the City. including catch basin cleaning per "Drainage System Maintenance SOP" (i.e. 40 % full criteria)	n/a	Per Adopted SOP's	Documented and reported in biennial progress report. Quantify reduced catch basin debris removal

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Action #	Action Item	MIS040000 Jurisdictional General Permit Section (Note 1)	Method of Implementation	Partner Permittees	Schedule	Evaluation
P2GH #8	TSS Reduction	Part I.B.6.b	City will improve maintenance of unpaved City lots and yards with use of catch basin inserts including catch basin cleaning per "Drainage System Maintenance SOP" (i.e. 40 % full criteria)	n/a	Annually	Quantify catch basin debris removal from inserts
P2GH #9	Salt & Sand Reduction into Waterways	Part I.B.6.b	City will evaluate alternative methods for salt application on City owned roads and parking lots.	n/a	Annually	Revised procedures.
P2GH #10	Unpaved Yards/Parking Lot BMPs	Part I.B.6.b	City will improve maintenance of City owned parking lots or yards and install CB inserts where practical.	n/a	Annually and Maintenance per Implemented SOP's	Quarterly Review
P2GH #11	Coal Tar Emulsions	Part I.B.6.b	City will evaluate alternative methods for sealing asphalt surfaces.	n/a	Annually	Revised procedures.
P2GH #12	Fleet Maintenance & Storage Yards SWPPAP	Part I.B.6.b	City will create and implement a SWPPAP for all municipal fleet maintenance and storage yards within the City. The SWPPAP will be signed and overseen by the Storm Water Manager	n/a	Bi-Annual Inspections or per implemented SOP's	Completed SWPPAP(s) are evaluated through Bi-Annual inspections and storm water manager's quarterly review.
P2GH #13	Refuse BMPs	Part II.D.6	City will review alternatives for refuse management, ensuring storm water compliance.	n/a	Quarterly	Revised procedures, if necessary.
P2GH #14	Chemical Management	Part I.B.6.f	City will require employees or contractors using, storing and handling pesticides, herbicides, and fertilizers to have their Certified Pesticide Applicators License.	n/a	Seasonal	Revised procedures, if necessary.
P2GH #15	Phos-Free Fertilizer	Part I.B.6.f	City will only use phosphorous-free fertilizer for turf grass unless soil testing is completed first.	n/a	Seasonal	Soil test results, when applicable.

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Action #	Action Item	MIS040000 Jurisdictional General Permit Section (Note 1)	Method of Implementation	Partner Permittees	Schedule	Evaluation
P2GH #16	Vegetation Management on properties	Part I.B.4.b.1 Part I.B.6.f	City will evaluate all management procedures for City-owned properties. If applicable and feasible, City will revise maintenance procedures to address Permit requirements.	n/a	Quarterly review	Revised procedures, if necessary.

Note 1 – Applicable Compliance Requirements are Referenced Sections from Michigan Department of Environmental Quality National Pollutant Discharge Elimination System Wastewater Discharge General Permit MIS040000-for Storm Water Discharges from Municipal Separate Storm Sewer Systems (MS4s) With Controls Based on Six Minimum Measures. PEP items are from Approved Clinton River Watershed and Lake St. Clair Direct Drainage Collaborative Public Education Plan (PEP) Table 2.