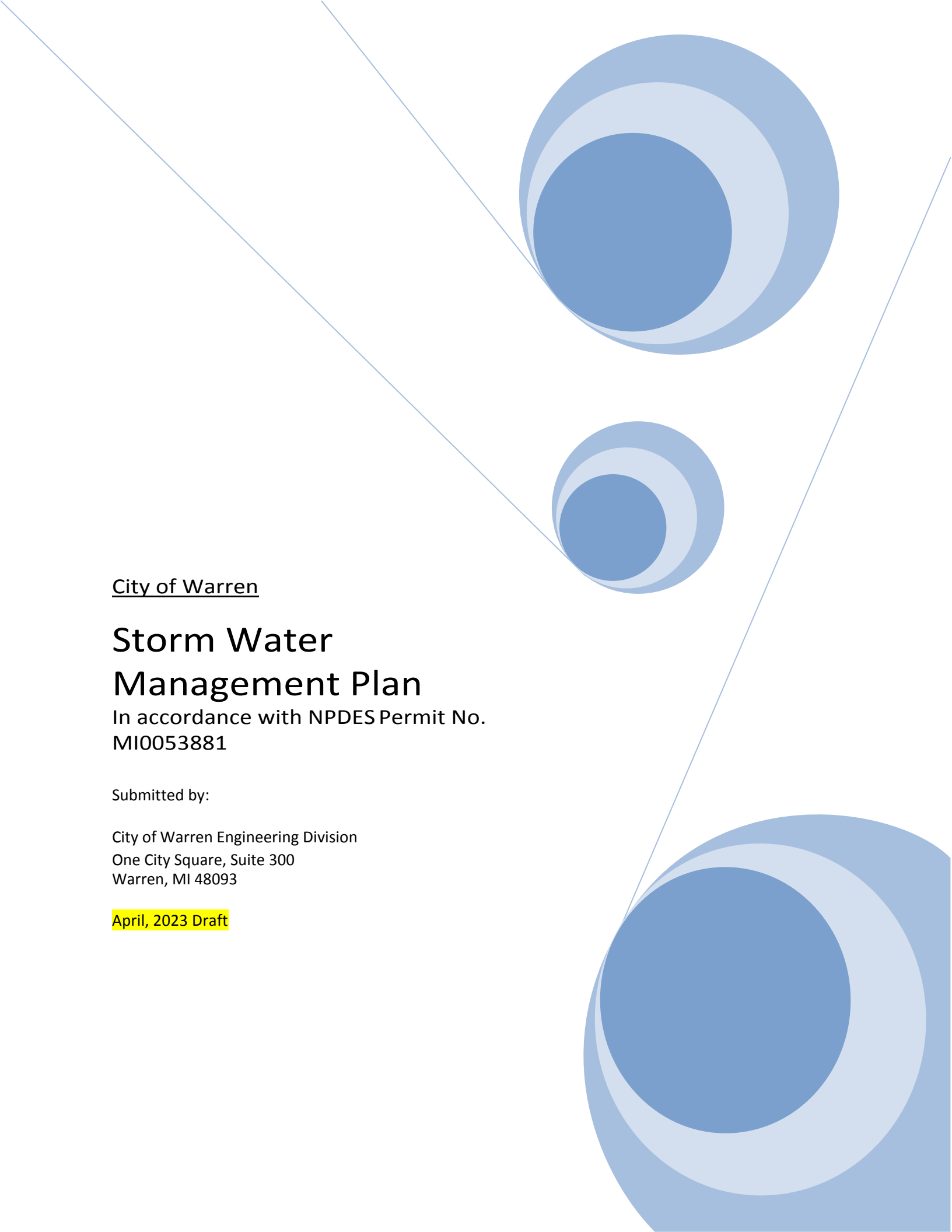




City of Warren

Storm Water Management Plan

In accordance with NPDES Permit No.
MI0053881

Submitted by:

City of Warren Engineering Division
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April, 2023 Draft

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City of Warren Storm Water Management Plan

General Requirements

In accordance with the City's Individual Jurisdictional Permit for Municipal Separate Storm Sewer Systems (MS4s), permit no. MI0053881, the City of Warren has prepared the following Storm Water Management Program (SWMP) Plan. As required in Part I.A.3 of the permit, this SWMP is intended to progress toward accomplishing the following objectives:

- 1) Reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable (MEP). As stated in the permit, the MEP requirement shall be met by the following:
 - a) Implementing Best Management Practices (BMPs) to comply with the requirements in Part I.A.3.i. of this permit.
 - b) Demonstrating that measurable goals were met for individual BMPs.
 - c) Demonstrating the effectiveness or environmental benefit of each BMP.
- 2) As required in the permit, it is the intent of the City of Warren to utilize the TMDL Implementation plan under this SWMP to make progress toward reducing pollutants in storm water discharges from the MS4 as appropriate to be consistent with Total Maximum Daily Loads (TMDL) approved by the United States Environmental Protection Agency (USEPA). Within the City of Warren, the following TMDL applies: E. coli for the Red Run Drain and Bear Creek, Macomb and Oakland Counties (August 2006).

SWMP Development and Implementation

1. This SWMP plan is intended to meet the standard requirements of this permit. The City of Warren shall implement this SWMP plan upon approval by the Michigan Department of Energy, Great Lakes and Environment (EGLE). This SWMP shall meet the requirements identified in Part I.A.3 of the permit.
2. Revisions to the SWMP may include schedules for phasing in storm water management actions to meet the standard requirements during the term of this permit.
3. All actions shall be implemented (i.e., put into action, operation, service, or practice) over the term of this permit.

Public Education Program (PEP) – Education and Outreach on Storm Water Impacts

The PEP shall promote, publicize, and facilitate watershed education for the purpose of encouraging the public to reduce or prevent the discharge of pollutants in storm water to the maximum extent practicable. Since combining or coordinating existing PEPs for public stewardship of water resources is encouraged by the Department of Energy, Great Lakes and Environment (EGLE), the City of Warren has contracted with the Clinton River Watershed Council to provide public education services. In addition, the City recognizes and utilizes the educational resources offered by EGLE the Southeast Michigan

Council of Governments, the Macomb County Public Works Office, the Macomb County Health Department, and the Michigan State University Extension.

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, Anchor Bay and Lake St. Clair Direct Drainage Collaborative Public Education Plan (PEP) which was reviewed and approved March 21, 2023 by EGLE (See Appendix B). The approved PEP includes a Permittee Specific Activity Action Table within 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. These are included in Appendix B- PEP of this SWMP. The public education program has been developed to conduct public education on the following topics, based on the potential impact on the receiving waters:

1. Hazards associated with illicit discharges and the improper disposal of waste.

The City of Warren encourages public reporting of the presence of illicit discharges or the improper disposal of materials into the City's MS4, and has developed and publicizes a hotline for public reporting. According to EGLE, common illicit discharges are: construction site wastes and sediment, carpet cleaner wastes, household wastes and motor vehicle fluids from home owners, septic and other commercially-transported wastes, and commercial power washing (except residual street washing water discharges and other discharges that are exempt from prohibition, such as:

- a. Discharges that comply with a NPDES permit;
 - b. Discharges from firefighting activities that are not significant sources of pollutants to the waters of the State of Michigan;
 - c. If they are not significant contributors to violations of the Water Quality Standards as defined by Mich. Admin. Code, R 323.1041—R 323.1117.
2. The water body that would be potentially impacted by improper actions at or near a person's home
 3. The availability, location, and requirements of facilities for the collection and/or disposal of household hazardous wastes, travel trailer sanitary wastes, chemicals, grass clippings, leaf litter, animal wastes, and motor vehicle fluids
 4. The acceptable application and disposal of pesticides, herbicides, and fertilizers, including the use of phosphorus-free fertilizer alternatives, as appropriate
 5. Preferred car cleaning agents and procedures for noncommercial car washing

6. For property owners with a septic system, proper septic system maintenance and how to recognize system failure
7. For riparian land owners, management of riparian lands to protect water quality
8. Public responsibilities and stewardship in their watershed
9. The benefits of using native vegetation instead of non-native vegetation
10. Educate commercial, industrial, and institutional entities likely to have significant storm water impacts. At a minimum, commercial food services, primarily restaurants, shall be educated to prevent grease and litter discharges to MS4s

For all applicable topics, the PEP identifies the: Target audience(s), Key message(s), Delivery mechanism(s), Timetable, and Responsible party (or parties). In addition, methods for determining the effectiveness of the implemented PEP are identified. The current watershed-wide PEP is included in Appendix B.

Since the PEP is a collaborative effort between multiple public agencies and non-governmental organizations, revisions to the PEP may be made throughout the permit cycle. Revisions will be included in the annual progress report required under Part I.B.1 of the permit.

Public Involvement and Participation (PPP)

Public input is encouraged in all aspects of the SWMP. The following minimum actions shall be taken to encourage public input:

- a. The City of Warren shall follow local public notice requirements, as appropriate, when notifying the public that a SWMP is or will be implemented. Copies of the SWMP plan shall be available for public review, and the public shall be notified of when and where it is available.
- b. The City of Warren participated in the Red Run Sub-Watershed Advisory Group meetings for the purpose of encouraging public involvement in all aspects of the SWMP.
- c. The City of Warren cooperates with the Clinton River Watershed Council (CRWC), which is an integral part of the SWMP. The City keeps the CRWC informed of activities under the SWMP; provides them copies of the SWMP plan and welcomes input from the CRWC on the plan. The City also assists the CRWC in seeking volunteer assistance, including water quality monitoring support, and utilizes the CRWC to help meet permit requirements. The City of Warren fully supports the CRWC with their ongoing programs for water resource protection and enhancement.

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 the separate storm water drainage system that is under the City's jurisdiction. Within the City's limits, there are a total of 66 known outfalls and 735 points of discharge that outlet to County drains under the jurisdiction of the MCPWO and including points of discharge from City-owned facilities to other MS4s or ultimately to County Drains. The City is working to verify the ownership/ jurisdiction of the outfalls/ points of discharge within the City Limits. These will be tabulated and reported in the annual progress report upon verification as 1) Other public entities or 2) private. 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). Section Maps and the overall City Storm Sewer System Base Maps 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.

Post-Construction Storm Water Control for New Developments and Redevelopment Projects

The City of Warren has developed, implemented, and enforces standards through ordinances or implemented departmental procedures to address post-construction storm water runoff from all new and redeveloped projects that disturb one (1) acre or more, including projects less than one (1) acre that are part of a larger common plan of development or sale that would disturb one (1) acre or more. The program includes the following general requirements:

- A minimum treatment volume standard to address water quality impacts
- Channel protection criteria, as applicable, to address resource impairment resulting from flow volumes and rates.
- Operation and maintenance requirements
- Enforcement mechanisms with recordkeeping procedures
- A requirement for the project developer to prepare and implement site plans, which shall incorporate the requirements of this section of the permit.

The City of Warren shall retain records associated with this activity in accordance with Part I.A.3.f and Part II.B.5. of this permit.

The City of Warren shall establish structural storm water BMP design standards to the standards of the Macomb County Public Works office found in Part 5 – Managing Stormwater Runoff and Appendix G – Design Reference. The City will require that all development or redevelopment projects that discharge directly into a State or County-owned system obtain a permit from the applicable State or County agency prior to discharge.

Current Storm Water Management Efforts

The Clean Watersheds Needs Survey (CWNS), hosted by the U.S. Environmental Protection Agency, helps determine resources needed to improve wastewater, storm water, decentralized, and nonpoint source systems. Data collection began March 1, 2022 and concluded February 28, 2023.

EGLE is requesting that communities submit their capital improvement plans covering the next five to 20 years, with a goal to document as many capital needs as possible for the state. Although this is called a survey, EGLE is not requesting that communities do anything beyond submitting capital improvement plans that have already been completed. No additional effort will be needed, and participation will be paramount to determining the true needs of Michigan

Prior to December 1, 2021, Post-construction storm water runoff from all new and redeveloped projects that disturb one (1) acre or more, including projects less than one (1) acre that are part of a larger common plan of development or sale that would disturb one (1) acre or more shall ensure

that adequate drainage is designed for each development and redevelopment project based on the 10 year, one-hour design storm.

1. If the site drains directly to a City storm sewer, the existing capacity of the sewer is evaluated, and if adequate to accept the new flow, the new connection is permitted.
2. If the City sewer is not large enough to accept the new flow, on-site detention is required for the difference between the generated flow, and the available capacity.
3. If the site drains directly to a County Storm Drain, the developer is referred to the Macomb County Public Works Office for a permit to discharge.
4. If the site drains directly to an MDOT-controlled storm sewer, a restricted outlet is required by MDOT, and the site is developed to provide the on-site storage dictated by the given outlet rate.
5. All sites shall obtain and remain in compliance with the required soil erosion control permit and NPDES permits as applicable.

The City of Warren Master Stormwater Plan was last updated in 1974 by Hubbell, Roth and Clark Consulting Engineers (HRC). The purpose of that document was to determine the current system capabilities to convey runoff from the 10-year 1-hour design rain event. It is important to note, that since that document was prepared, no major drains have been constructed. The existing trunk drainage system, or system of County Drains is the same today as it was then, excepting the addition of the Hartsig Relief Drain in section 32 of the City.

The Conclusions of that report were:

- The existing trunk storm sewers serving the City have an average of 50% or less of the capacity needed for run-off from the 10-year design frequency rain.
- The deficiencies in capacities of existing systems cause flooding of City streets, parking lots and private properties.
- The Red Run Drain, to which all City drains are discharging, is undersized and needs improvement.
- Most of the drains located south of the Red Run, are deficient in capacities, and relief drains are needed city-wide.
- The improved drains located north of the Red Run, and some located south of it, including Branches A, B, D, E, and F, 14 Mile Road Drain, Walker Drain, Martin Road East Branch, Bear Creek South Branch and Service Road Drains installed in connection with the I-696 construction, have adequate capacities for run-off from a 10-year frequency rain and do not require relieving.

The recommendations derived from the conclusions all centered around the concept of increasing capacity to convey the 10-year rain event. This included \$79 Million (1979 dollars) in total recommended drainage construction, including improving the Red Run Drain and installation of many new County relief drains throughout the City. Since that time, only one of the proposed improvements – installation of the Hartsig Relief Drain in 1979-80, was completed.

Consequently, the City's drainage system is composed of a few areas with adequate capacity, at the time of the report, and a majority of areas with less than the desired (at that time) 10-year design event runoff capacity.

An emphasis has always been placed on transportation of flow away from Warren as quickly as possible. The majority of Warren was developed in the 60's and 70's under that concept. When the Phase I regulation were introduced, Warren was already 97% developed. Consequently, most Warren properties are not designed to accommodate any reduction in outlet rate. Site redevelopment is the primary means by which property use is changed, but unfortunately local ordinances which dictate paved parking areas, and the size of that parking, result in little change to existing runoff rates.

All opportunities that exist to reduce peak flows, improve runoff quality, and protect sensitive areas downstream of Warren, must be mostly centered around the redevelopment process. In order to change existing policy to accommodate this permit's requirements and give Warren the ability to begin to make a positive impact on stormwater quality, the City Council adopted changes to the existing Stormwater Ordinance in coordination with the City's storm water manager which included the following revisions :

1. Amended as Ordinance 80-734 on November 24, 2015 regarding post-construction storm water runoff.
2. Further amended as Ordinance 80-752 on February 28, 2017 regarding post-construction storm water runoff.
3. Further amended as Ordinance 80-781 on January 28, 2020 regarding storm water discharges and
4. Further Amended as Ordinance 80-796 on November 23, 2021 to address additional requirements for post-construction storm water runoff.

Adoption of the Macomb County Standards for new development and redevelopment, found in Part 5 – Managing Stormwater Runoff and Appendix G –Design Reference as applicable, within the City's MS4. This standard shall apply to post-construction storm water runoff from all new and redeveloped projects that disturb one (1) acre or more, including projects less than one (1) acre that are part of a larger common plan of development or sale that would disturb one (1) acres or more. This includes the following Minimum Treatment Volume Standards and Channel Protection Criteria:

Minimum Treatment Volume Standard

The minimum treatment volume standard shall be treating the post-development runoff volume generated from a 1.0-inch rainfall event from the entire site. Treatment methods shall be designed using best management practices (BMPs) on a site-specific basis to achieve the following:

- a. A minimum of 80 percent removal of total suspended solids (TSS), as compared with uncontrolled runoff, or
- b. Discharge concentrations of TSS not to exceed 80 milligrams per liter (mg/l)

A minimum treatment volume standard is not required where site conditions are such that TSS concentrations in storm water discharges will not exceed 80 mg/l.

Channel Protection Criteria

The channel protection criteria established in this SWMP is necessary to maintain post-development site runoff volume and peak flow rate at or below existing levels for specified standard storms. This was adopted as the *Channel protection control performance standard (CPC)* is maintaining post-construction storm water runoff and peak flow rate at or below the existing level based on the following controls:

- (i) Channel Protection Volume Control (CPVC)—retain onsite post-development runoff volume from a 1.2-inch rainfall event; and
- (ii) Channel Protection Rate Control (CPRC)—provide extended detention for the post-development runoff volume from a 1.9-inch rainfall event.

Existing level is the runoff volume and peak flow rate from the land use immediately preceding the development or redevelopment project. Since the vast majority of the City of Warren is already densely developed, the existing runoff volumes and peak flow rates are likely to be relatively unchanged by any new development or redevelopment, but it will be the responsibility of the proposed development to address this concern. Per the Macomb County Public Works Office Design Standards, the CP Volume for a 2-yr storm must be stored and released over a period of at least 24 hours.

All structural and vegetative BMPs installed as a requirement under this section of the SWMP shall include a plan for maintaining maximum design performance through long-term operation and maintenance (O & M). The City of Warren will develop, track, and enforce a program through the ordinance or other regulatory mechanism to ensure long-term O & M plans for the water quality treatment and channel protection controls the City requires. The City shall make records associated with this activity available to EGLE upon request.

Specific program goals for Post Construction Storm Water Control are included in Appendix F:

Construction Storm Water Runoff Control

EGLE has determined that Part 91 of the Michigan Act and Michigan's Permit-by-Rule (Rule 323.2190) are qualifying local programs for the control of wet weather discharges from construction activities that result in land disturbance of greater than or equal to one (1) acre, or disturb less than one (1) acre that is part of a larger common plan of development or sale. A qualifying local program provides control for soil erosion, off-site sedimentation, and other construction-related wastes, consistent with the Federal Phase 2 storm water control requirements for MS4 permittees. The Macomb County Public Works Office is the Part 91 permitting entity within the City of Warren.

To ensure adequate protection of the MS4, the City of Warren has developed and implemented the following:

- a. A procedure to provide notice as follows when pollutants are discharged from construction activity in violation of Section 9116 of Part 91 of the Michigan Act, Michigan's Permit-by-Rule at R 323.2190(2)(a), or the prohibition of non-storm water discharges in Part I.A.1.c. of this permit; and the pollutants enter the MS4 owned or operated by the City of Warren:
 - 1) Notify the Part 91 permitting entity and EGLE when soil and sediment are discharged, or
 - 2) Notify EGLE when other wastes are discharged.

If the City suspects the discharge may endanger public health or the environment, the violations shall be reported in accordance with Part II.C.7. of this permit.

- b. A procedure to ensure that preliminary site plans adequately allow space for future soil erosion and sedimentation controls, as applicable.
- c. A procedure for the receipt and consideration of complaints or other information submitted by the public regarding construction activities discharging wastes to the MS4.

Specific program goals for Construction Storm Water Control are included in Appendix F:

Pollution Prevention/Good Housekeeping for Municipal Operations

Municipal operations cover a wide variety of activities and land uses that are potential sources of storm water pollutants. These operations include, but are not limited to, roadways, parking lots, transportation and equipment garages, fueling areas, warehouses, stockpiles of salt and other raw materials, open ditches and storm sewers, turf and landscaping for all municipal properties, including parks, and waste handling and disposal areas.

The City of Warren has developed, implemented, and ensures compliance with a program of operation and maintenance of BMPs, with the ultimate goal of preventing or reducing pollutant runoff to the maximum extent practicable from municipal operations that discharge storm water to the surface waters of the state. The City draws upon BMP guidance and training materials that are available from federal, state, or local agencies, or other organizations, such as the Southeast

Michigan Council of Governments, (SEMCOG), the Macomb County Public Works Office, and the Clinton River Watershed Council (CRWC).

The program contains the following elements:

a. Employee/Contractor Training

The City of Warren shall ensure there is training for appropriate staff on topics that affect the water quality entering the MS4, such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, storm water system maintenance, and any other activity included in the standard requirements of Part I.A.3.g.6 of this permit. Timing for training shall include the following:

- For existing employees, one (1) training session prior to the expiration of the City's MS4 permit cycle
- For new employees, one (1) training session during the first year of employment
- For contractors, the City shall ensure that they are trained before they perform the contract work. The City will accomplish this by either conducting the training or providing training materials relating to storm water management activities, which may include local pollution control specifications, before contractors perform work for the City.

b. Structural Storm Water Control Effectiveness

Structural storm water controls include, but are not limited to, vegetated swales; infiltration, sedimentation and bioretention facilities; storm water devices (e.g., catch basins and oil/water separators); and any controls installed or operated by the City of Warren to remove pollutants from storm water. Structural Storm Water Controls shall have routine maintenance performed, and maintenance schedules shall be adequate to maintain pollution removal effectiveness at design performance and to ensure that the controls are maintained in a condition (e.g., adequately stabilized, seeded, functional) to reduce contribution of pollutants to the surface waters of the state.

- 1) The City inspects all such controls at a frequency appropriate for the BMP design and site conditions. Inspection frequencies are identified in the table contained in this section of the SWMP.
- 2) A summary list of municipal properties and structural storm water controls owned or operated by the City is included as Table 1A of the SWMP. This list includes the type and number of municipal properties and includes addresses of the property locations (See Appendix A – Maps & Tables).

Warren is also responsible for maintenance of two existing small storm water detention basins, one at the intersection of Denton and Miller roads and the other at the intersection of Dimas

and Mary Ann roads. The basins are designed as dry basins, so the only maintenance performed by the City is routine mowing. No sediment is removed from these facilities.

The location information shall be updated whenever new municipal properties and structural storm water controls are added. A listing of specific storm water BMPs installed at each property is provided with the SWMP as Table 1A (See Appendix X). The location information is maintained by the City Engineering Division and, upon request, can be provided to EGLE for review.

3) The City of Warren has implemented procedures to dispose of the following materials in accordance with Part 111 (hazardous waste), Part 115 (solid waste), and Part 121 (liquid industrial waste) of the Michigan Act: operation and maintenance waste, such as dredge spoil, accumulated sediments, floatables, and other debris the permittee removes from the MS4.

The City of Warren Division of Public Works is responsible for the cleaning and maintenance of all storm sewers and open ditches, which service the City. The Macomb County Public Works Office is responsible for the cleaning and maintenance of all enclosed and open County Drains which traverse the City. The Oakland County Water Resources Commissioner (WRC) oversees the maintenance activities required on the Red Run Drain.

No large open drains are the City of Warren's responsibility for maintenance. The City's system consists of enclosed storm sewers up to ten feet in diameter, and small roadside ditches along the few gravel and asphalt roads remaining in the City.

The Public Works Division utilizes two vacuor trucks to clean out catch basins, and jet and clean storm sewers. They also utilize backhoes and other scraping and excavating equipment to clean out and reestablish grade in roadside ditches. The spoils obtained from those activities are disposed of in the following manner. Catch basin sediment, and sewer jetting debris is collected dumped at the ash lagoon of the City's waste water treatment plant. The liquid products are fed back into the plant for processing, the solids settle out, and eventually go to a licensed landfill.

Soil and sediment resulting from ditch-cleaning activities is hauled to the Public Works yard, where it is picked up by a contract hauler, and disposed of at a landfill.

4) When the City adds facilities or structural controls for water quantity or pollution treatment or removal, it shall design and install the controls based on the minimum treatment volume standard, channel protection criteria, and requirements for operation and maintenance established under Part I.A.3.f. of the City's permit.

c. Roadways, Parking Lots, and Bridges

1. The City of Warren shall construct, operate, and maintain its streets, roads, highways, parking lots, and other permittee-owned or operated impervious infrastructure in a manner so

as to reduce the discharge of pollutants into the MS4 and the surface waters of the state, including pollutants related to snow removal practices.

2. The City of Warren shall strive to reduce the runoff of TSS from all of its paved surfaces to the maximum extent practicable, as compared to annual loading from runoff with no suspended solids controls.

TSS reductions may be achieved by any combination of pollution prevention (e.g., improved materials handling, or altered land uses or traffic patterns), removal (cleaning streets and catch basins), or treatment (settling filtration or infiltration).

Reductions of sediment from activities otherwise regulated or prohibited, such as sediment track-out or runoff from construction sites, shall not be counted toward the TSS reduction goal.

Catch Basin Cleaning Program

The Department of Public Works is responsible for cleaning of City-owned catch basins in public rights-of-way (ROW), and operates under a schedule which dictates that each catch basin is inspected on average once every six (6) years. Catch basins found to be deteriorated during the inspection are either repaired by DPW forces at that time, or turned into the Engineering Division for repair. Catch basins found to need cleaning during the inspection are cleaned by the DPW at that time. During the permit cycle, the City Engineering Division will verify the number of City-owned catch basins and those owned by other MS4's (i.e. MDOT, etc) or privately-owned using GIS and available City records. Those found to be other than City-owned will be tabulated and included in the City's annual progress report.

The Engineering Division also inspects catch basins that are reported by the public to be deteriorated. Those catch basins warranting repair are put on a list and a repair program formulated every one to two years depending on the availability of funding.

The City will maintain the effectiveness of its current catch basin cleaning program. The map denoting the areas of the City to be cleaned will be included in each annual report.

Street Sweeping Program

The City of Warren will maintain its aggressive street sweeping program which results in the reduction of sediments and accessory pollutants to the City's MS4 and Macomb County's drainage system. The City currently sweeps all major and local roads at least three (3) times per year.

The Department of Public Works is responsible for sweeping all City major and local roads. Current practices dictate that each street under City jurisdiction be swept a minimum of three times each year.

As a method of assessing progress in storm water pollution prevention, the City's annual progress reports shall provide an estimate of the TSS loading reduction achieved.

3. Salt and sand applied for improved traction is prevented from entering MS4s and receiving streams to the maximum extent practicable. Good housekeeping practices are in place at salt and sand storage facilities to prevent the discharge of salt and sand from these areas. The City also complies with the salt storage requirements of the Part 5 Rules (Rules 324.2001 to 324.2009 of the Michigan Administrative Code).

Winter snow and ice management carefully balances road safety considerations and water quality issues, which may be caused by pollution from deicing compounds. The City's approach to applying salt or plowing snow from roads during winter conditions is based on the relative importance of the roadway. Major roads are plowed or receive salt first because they carry the highest volume of traffic. Residential streets may not even be plowed or receive a salt application depending on the duration of the ice or snow conditions and the magnitude of problems. MDOT has responsibility for deicing and snow clearance on interstate roads. The rate of application is controlled following standard recommended practices of the Michigan Department of Transportation (MDOT).

4. The City of Warren shall investigate and implement appropriate BMPs to control dust and suspended solids in runoff from the few remaining unpaved roads in the City.
5. The City does not use coal tar emulsions to seal asphalt surfaces.

d. Fleet Maintenance and Storage Yards/Facilities

- 1) The City of Warren has developed Storm Water Pollution Prevention Plans (SWPPPs) for all municipal fleet maintenance and storage yards/facilities that are not regulated as industrial activities and has a certified storm water operator to oversee storm water controls at all facilities with SWPPPs. Pollution Incident Prevention Plans (PIPP) are incorporated into the SWPPP as applicable to the specific facility.
- 2) The SWMP shall identify its fleet maintenance and storage yard facilities (including those for nested jurisdictions, if applicable), and shall indicate if a SWPPP has been developed for each facility and if it was implemented under the supervision of a certified storm water operator.

Fleet Maintenance and Storage Facilities:

Facility Name and Address	SWPPP Developed	Certified Storm Water Operator
<u>Department of Public Works</u> 12801 Stephens Warren, Michigan 48089	Voluntary	Yes
<u>Sanitation Division/Recycling Yard</u> 25601 Flanders Warren, Michigan 48089	Facility has separate permit	Yes
<u>Waste Water Treatment Plant</u> 32360 Warkop Warren, Michigan 48093	Facility has separate permit	Yes

- 3) The completed SWPPPs shall be signed by the facility manager and the certified storm water operator or Storm Water Program Manager, as applicable, and retained on-site at the facility which generates the storm water discharge. The City shall retain the SWPPP, reports, log books, storm water discharge sampling data (if collected), and supporting documents in accordance with Part II.B.5 of this permit.
- 4) Fleet maintenance activities include, but are not limited to, adding or changing vehicle fluids, including fuel, lubrication, mechanical repairs, parts degreasing, and vehicle or equipment washing. Storage yards include, but are not limited to, areas where vehicles are stored or impounded, and where vehicle and road maintenance materials and other chemicals in bulk are stored and handled. Discharge of vehicle or maintenance facility wash water is not authorized by this permit. Vehicles and equipment shall be maintained for clean and effective operation to prevent impacts on storm water quality.
- 5) The City of Warren also investigates and implements appropriate BMPs to prevent the discharge of pollutants to the MS4 from the storage, collection, transport, and disposal of refuse by the permittee or for the permittee under contract.

e. Managing Vegetated Properties

The City of Warren minimizes the discharge of pollutants related to the management of vegetation on land that the permittee owns or operates. BMPs required under this measure include:

- 1) A process to train employees and contractors on the proper storage, handling, and use of pesticides, herbicides, and fertilizers before they handle or apply them
- 2) Use of only phosphorus-free fertilizers on turfgrass. Phosphorus may be added to turfgrass only if soils are tested for nutrients (nitrogen/phosphorus/potassium) a minimum of every four (4) years and a need for phosphorus is demonstrated. Phosphorus fertilizers shall be applied to lands that the City owns or operates only as prescribed in the soil test results.
- 3) A program to minimize storm water impacts from all of the City's managed vegetated properties

Total Maximum Daily Loads (TMDL) Implementation Plan

As required in the permit, the City shall put into operation the TMDL Implementation Plan as part of the SWMP to be consistent with the requirements and assumptions of the E. coli TMDL for the Red Run Drain and Bear Creek, Macomb and Oakland Counties (August 2006). This plan shall identify and prioritize actions to reduce pollutants in storm water discharges from the MS4 in order to make progress in meeting the Water Quality Standards.

The City's **MS4** includes both open and enclosed drainage systems that are owned or operated by the applicant; solely convey stormwater; and discharge, either directly or via an **MS4** owned or operated by another public body, to a surface water of the state. An "outfall" means a **discharge point** from an **MS4** directly to surface waters of the state. A "**point of discharge**" means a discharge from an MS4 to an MS4 owned or operated by another public body.

For reference, the following is the MCPWO Prioritization (From MCPWO's "Illicit Discharge Elimination Program (IDEP) and Total Maximum Daily Loads (TMDL) Alternative Approach")

"To accomplish this, outfalls are prioritized based on several parameters. Lake St. Clair supports a vibrant economy for Macomb County in recreation and fishing and it is very important to ensure clean water for residents to enjoy. Historically local beaches have been closed for many days each summer due to high e. coli levels. Given the success from previous efforts to identify and correct illicit connections in the Red Run subwatershed and in an attempt to improve water quality in Lake St. Clair we have prioritized our outfalls that drain directly to the lake and Lower Clinton River as our first priority.

Timing for screening during a full permit cycle:

- *Years 1 and 2- Lower Clinton River and Lake St. Clair Direct Drainage. We will collect dry and wet weather samples at all outfalls on Lake St. Clair. If an issue is found, it will be traced upstream to the next county MS4 drain until the source is identified. 24 outfalls will be sampled.*

- *Year 3 and 4 - Red Run. We will collect dry and wet weather samples at county MS4 drains that are tributary to the Red Run. If an issue is found, it will be traced upstream to the next county MS4 drain until the source is identified. 27 outfalls will be sampled.*
- *Year 5 – Other areas. We will focus our efforts on other county MS4 drains that drain directly to the Clinton River or other waters of the state. If an issue is found, it will be traced upstream to the next county MS4 drain until the source is identified. 10 outfalls will be sampled.*

For the remaining portion of the County discharge points/outfalls, the monthly monitoring sample results and the presence of a TMDL will be used to prioritize the next subwatershed investigated for the presence of E. coli. “

The following specific actions shall be taken by the City of Warren:

1. The City will perform required TMDL sampling based on IDEP/ DWS and once per permit cycle at Municipal owned properties, City Parks and at least once per permit cycle at City Outfall/ or Point of Discharge as determined through a collaborative effort with MCPWO and MCHD's prioritization based on their Alternative Approach.
2. City will use the information from activity TMDL #1 above to prioritize affected areas or those areas that could potentially be sources of pollution.
3. It is anticipated that by the end of the permit cycle, the City of Warren shall take at least one representative sample of a storm water discharge from at least 20 percent of the major outfalls discharging directly to surface waters of the state within the portion of the TMDL watershed in the urbanized area based on TMDL #1 above. A major outfall or point of discharge is a pipe or open conveyance measuring 36 inches or more at its widest cross section. At a minimum, the sample shall be analyzed for E coli.
4. The City of Warren shall retain these results and report them in the annual progress report.
5. The City of Warren shall use these results and other available information to develop and prioritize actions to reduce the discharge of E. coli to be consistent with the TMDL. It is anticipated that this prioritization process and sampling will be completed with other agencies and jurisdictions within the Red Run sub-watershed (R2W), such as the Macomb County Health Department and the Macomb County Public Works Office. Progress on this effort will be reported in the annual progress report.
6. From MCPWO's "Illicit Discharge Elimination Program (IDEP) and Total Maximum Daily Loads (TMDL) Alternative Approach" stated, "Investigated over **10,000** residential, commercial, industrial and institutional facilities since 1998; Much of the work has occurred in Warren and Center Line*. These communities were chosen because of the persistently high levels of E. coli found from sampling efforts in the Bear Creek and Red Run subwatersheds." (*Note: Center Line represents parts of Sections 21, 22, 27 and 28 of Warren Township.)

A Total Maximum Daily Load (TMDL) is 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 Warren MS4, the following TMDL's have been established:

E. coli Red Run Drain and Bear Creek TMDL	ID-58
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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 once during the permit cycle or as a necessary progression from dry weather screening. 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.
- c. 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.

Storm Water Management Action Plan

Phase I communities were 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 provided as Appendix F, summarizes the implementation activities necessary to meet these measures.

City of Warren
Storm Water Management Program (SWMP)

Appendix A

Maps and Tables

City of Warren

Storm Water Management Program (SWMP)

Appendix B

Public Education Program (PEP)

City of Warren

Storm Water Management Program (SWMP)

Appendix C

Illicit Discharge Elimination Program (IDEP)

The City of Warren has developed, implemented, and enforces a program to detect and eliminate illicit connections and discharges to the City's storm sewers, downstream MS4's and waters of the State. The IDEP includes the following:

- a. An ordinance and program to effectively prohibit illicit discharges into the MS4 owned or operated by the City of Warren that implements appropriate enforcement actions. The ordinance and program is intended to achieve the following objectives:
 - (1) Regulate the contribution of pollutants to the MS4 owned or operated by the City of Warren.
 - (2) Prohibit illicit discharges, including the direct dumping or disposal of materials into the MS4 owned or operated by the City of Warren.
 - (3) Establish the authority to investigate, inspect, and monitor suspected illicit discharges into the MS4 owned or operated by the City of Warren.
 - (4) Require and enforce elimination of illicit discharges and connections into the MS4 owned or operated by the City of Warren.

Copies of the applicable City ordinances are available at the Clerk's Office and at the Engineering Department. Current copies of applicable ordinances are included in **Appendix D – Policy, Ordinances and Regulations.**

- b. A program to find and eliminate illicit connections and discharges to the MS4 from commercial, industrial, private educational, public, and residential sources. The program to find and eliminate illicit discharges and connections as presented in Appendix C-IDEP>:
 - 1) A storm sewer system map, showing the location of all discharge points the City of Warren owns or operates, and the names and location of all the surface waters of the state that receive discharges from the City's MS4. A separate storm sewer system includes: roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, and man-made channels. The storm sewer system map is maintained by the City Engineering department and can be made available to EGLE upon request. System information is updated as discharge points are identified or added. The current Section Maps are included in Appendix A – Maps & Tables.
 - 2) Identification of areas prioritized by the City of Warren for dry-weather screening or other investigation methods for the purpose of maximizing the detection and elimination of illicit discharges.
 - 3) A plan and procedures to perform dry-weather screening of each MS4 point of discharge on a routine basis.

The City will implement dry weather screening of the prioritized City-controlled 801 outfalls or points of discharge points to be completed based on the proposed prioritization by the end of the five-year permit cycle.

The City has identified sixty-six (66) of the 801 as outfalls in Sections 2, 3, 4, 5, 6, 8 and 10 of the City (as Township 1 North, Range 12 East). The City has adopted the Macomb County Storm Water Standards and will implement a dry-weather screening procedure based on the MCPWO prioritization:

- Year 1 - Outfalls to Surface Waters of the State. City will collect dry weather samples at the identified outfalls as listed in the "City of Warren Storm Water Outfalls and Monitoring Points (See Appendix A). These sixty-six (66) outfalls are located in Sections 2, 3, 4, 5, 6, 8 and 10 as noted above. From the Macomb County Drain Map (2019) included in Appendix A, these outfalls are to the open drain portions of the Bear Creek and Red Run Drain within the City of Warren. If dry-weather flow is observed or other suspect criteria are found, it will be traced upstream to the next county MS4 drain until the source is identified. If dry-weather flow is observed or other suspect criteria are found, it will be traced upstream to the next county MS4 drain until the source is identified. Points of discharge will be sampled based on observed flow. In addition, the City will work to verify the ownership/ jurisdiction of the outfalls/ points of discharge within the City Limits. These will be tabulated and reported in the annual progress report upon verification as 1) Other public entities or 2) private.
- Year 2 - Points of Discharge will be dry-weather screened (DWS) of enclosed drainage portions of Bear Creek and Red Run directly tributary to the outfalls in Year 1 (Sections 1 through 6) up to twenty percent (20%) of the total outfalls/points of discharge for the year. If dry-weather flow is observed or other suspect criteria are found, it will be traced upstream to the next county MS4 drain until the source is identified. Points of discharge will be sampled based on observed flow.
- Years 3 and 4 – The City will perform DWS at the City's points of discharge MS4 drains that are tributary to the Red Run continuing south (Sections 7 through 12, then Sections 13 through 18, Sections 19 through 24, then Sections 25 through 30) as determined based on the MCPWO's three Priority levels and approximately twenty percent (20%) of the total outfalls/points of discharge per year. If dry-weather flow is observed or other suspect criteria are found, it will be traced upstream to the next MS4 drain or until the source is identified. Points of discharge will be sampled based on observed flow.
- Year 5 - The City will continue to screen the outfalls/ points of discharge of approximately twenty percent (20%) of the total outfalls/points of discharge for permit year 5 for Sections 31 through 36. Other areas. City will focus our efforts on the other county MS4 drains, as identified by Warren that drain directly to the Red Run Drain or other

waters of the state. If dry-weather flow is observed or other suspect criteria are found, it will be traced upstream to the next MS4 drain or until the source is identified. Points of Discharge will be sampled based on observed flow.

At a minimum, dry-weather screening shall include recorded observations of MS4 points of discharge flows and receiving water characteristics, including: water clarity, color, and odor; the presence of suds, oil sheens, sewage, floatable materials, bacterial sheens, algae, and slimes; staining of the banks and unusual vegetative growth. MS4 discharge structures shall be observed for unusual vegetative growth, staining, undocumented connections, and integrity of the structure.

If flow is observed from the MS4 point of discharge, then the City of Warren shall do one of the following:

- Where an illicit discharge and its source are obvious, it shall be eliminated, and additional analysis or sampling is not required, or
- Conduct a field assessment of the dry-weather flow to analyze for the presence of E.coli.

4) If an illicit discharge is detected, but the source has not been identified by the initial field screening, within 1 to 2 business days the City will initiate a source investigation. The source investigation will seek to confirm the source of the illicit discharge. The source shall be confirmed by one or more of the following methods: indicator parameter testing, which may include chemical and bacterial sampling; dye testing; video testing; smoke testing; documented visual observation or physical indicators; homeowner surveys and surface condition inspections for on-site sewage disposal systems; and drainage area investigations. The discharge of tracer dyes shall be authorized in accordance with Rule 1097 (R.323.1097), as referenced in Part I.A.6 of this permit.

Dry Weather Screening Follow-Up Program

The recommended follow-up program will allow the City to better define where they can concentrate future resources for removing illicit connections.

Step 1

Conduct Dry Weather Field Screening for the major and minor outfalls and points of discharge in the storm sewer system in which flow was observed and sampled for detectable parameters. Dry weather sampling protocol will be used to re-inspect and monitor the outfalls and points of discharge where both flow and a sample parameter were found. These “suspect” outfalls and points of discharge will be sampled two more times during the permit cycle of the City’s Storm Water permit. This re-sampling program will allow the City to determine if the observed parameter is a chronic problem for the outfall/

point of discharge or was only a conditional observation associated with the time of the sampling program.

The information to be collected for each outfall is: the site ID; the date and time of the inspection; qualitative data consisting of odor, oil sheen, and other observations; quantitative data consisting of E.coli samples and other chemical parameters as necessary; estimated flow rate; date of last storm; and the amount of rainfall in the last storm.

The source identification process at each location, which exhibits dry weather flow, consists of utilizing E.coli analysis as the primary indicator of an illicit connection. If E.coli levels are low, but City personnel still suspect that an illicit connection exists, then ammonia or detergents are used as secondary indicators.

Identified outfalls/points of discharge are observed and if dry-weather flow exists, samples of that flow are collected. Those samples are then usually analyzed for E.coli. The samples are then ranked based on the following categories:

1. E-Coli greater than 10,000 cfu/100 ml
2. E-Coli greater than 5,000 cfu/100 ml, but less than 10,000 cfu/100 ml
3. E-Coli greater than 1,000 cfu/100 ml, but less than 5,000 cfu/100 ml
4. High ammonia and detergent levels

Further drainage system and sub-system investigation proceeds upstream based on the rankings of the pollutants found in the samples. Those falling into category one are investigated first, those falling into category two are investigated next, etc. The same criteria are also used when tracing the pollutants upstream into the drainage sub-districts to determine which branch of the drainage system to investigate first (steps 2 and 3 below).

Once the pollutant of concern is traced to an area between two access points (usually manholes) to the storm sewer, source identification proceeds as in Step 4 below.

Step 2

Review of Previous Records. Once a problem outfall is identified, available records for both the storm and sanitary sewer system network in the outfall service area are collected. Information on past reported pollution problems and special studies will be reviewed to identify potential areas that might be the source of pollution in the outfall. This would include past complaints, smoke-testing studies, in-pipe video camera inspections, or past actions to disconnect an illicit connection. This review will include existing land use information, and industrial or commercial uses which may be a part of the City's pretreatment program in the outfall service area will be located. The review is intended to isolate higher probability sub-drainage areas where a pollution source exists.

Step 3

Manhole-to-manhole upstream inspections. Next, a manhole-to-manhole inspection is conducted on the high-probability sub-drainage areas by the City's illicit connection identification team. A search, test, and locate technique will be required. The investigation may operate in a sub-drainage area or for the entire outfall depending on the size of the area and probability of pollutants originating in sub-drainage areas.

The strategy for each problem outfall drainage area may be different. For example, the first manhole to inspect could be the location of the highest probability sub-drainage area. Presence of dry weather flow would be the key element of the techniques. Sampling that occurred at manholes in Step 1 could be useful for selecting a sub-drainage area. If flow exists, a sample will need to be taken to determine if the flow is polluted with the suspect parameter(s) identified at the main storm water outfall. If a pollution problem is not confirmed, it is likely that a manhole in a different location would be inspected for flow and a sample drawn from that location. Once a pollution problem in a sub-drainage area is found, additional testing and inspections may simply move to the next upstream manhole until the problem is located between two manholes.

Step 4

Suspected Source Testing: Once the manhole inspection and testing program has narrowed the outfall area to a single manhole, source testing will be necessary. The City of Warren's Department of Public Services has previously exercised "right-of-entry" authority to correct improper connections. Suspected source testing may be conducted by using smoke testing, fluorometric dye testing, or pipe line video camera inspection techniques that are commonly employed for testing sewer integrity.

The City has defined a policy for correcting illicit connections. There may be differences according to whether the land use with the violation is a commercial, industrial or residential use. When a Notice of Violation (NOV) is issued, a set period of time to correct the violations is included in the NOV. Failure to comply with the NOV may result in court action to correct the problem.

Facilities that are found to not have a direct illicit connection to the storm sewer system but which are causing pollution in the storm sewer system through storm runoff will be cited to correct the problem. If the facility is an industrial use, the City will verify that the facility has filed for an industrial NPDES storm water permit. If filing has occurred for an industrial use, but a storm water pollution problem exists, EGLE will be notified of the violation and requested to take action against the industrial permit holder.

5) Procedures for eliminating illicit discharges and pursuing enforcement action, including responding to spills and emergency situations. The procedure shall specify measures for expeditious response to, and elimination of, each identified illicit discharge, spill, and

emergency situation. The City of Warren has developed a system to track the elimination status of illicit discharges and enforcement actions. The system also tracks confirmation that illicit connections are removed or the discharge permanently ceased. Records associated with this activity available to EGLE upon request.

Notification Procedures

Upon confirmation and identification of the responsible party for an illicit connection or discharge to the City's MS4, the City will follow the following protocol for notification of all affected parties:

1. A notice of violation (NOV) will be prepared and sent via registered mail to the property owner from whom the illicit connection has been confirmed. The NOV will contain a cease and desist order, or a timetable for removal of the illicit connection, based on the applicable City Ordinance, or State Law.
 2. Since all storm sewers in Warren ultimately discharge to a County Drain, the Macomb County Public Works Office will be sent a copy of every NOV. Should an illicit connection be identified by City crews to be discharging directly to a County Drain, the Public Works Office will be notified by phone the same day, with follow up correspondence describing the connection, location, and type of discharge, sent via regular mail shortly thereafter.
 3. If an illicit discharge is identified from a malfunctioning septic tank, a NOV will be sent as in #1 above, and a copy of the NOV forwarded to the Macomb County Health Department. If the illicit discharge can be rectified by connection to an available City sanitary sewer, the City of Warren will provide the lead in enforcing the needed correction. If City sewer is not available; the City will defer to the Health Department for enforcement of the needed corrections.
 4. Should an illicit connection be identified as originating in or from a sewer under the jurisdiction of the Michigan Department of Transportation (MDOT) or the Macomb County Road Commission, the Warren/Sterling Heights MDOT TSC office or the Macomb County Road Commission will be notified as in #2 above.
 5. If the defect causing the illicit discharge is determined to be in City right-of-way, and if the defect is due to deteriorated City utilities or a situation for which direct responsibility cannot be assigned to a particular party, the City of Warren Water Division will be notified of the situation, and will perform the needed correction.
- c. Program to train staff, especially those involved in illicit discharge-related activities and those who have field jobs with the potential for witnessing illicit discharges and connections. At a minimum, the training shall include the following:

- The definition of illicit discharges, illicit connections, and sanitary seepage
- Techniques for locating illicit discharges, including field screening, source identification, and recognizing illicit discharges and connections
- Methods for eliminating illicit discharges and the proper enforcement response
- Proper procedures for responding to spills and emergency situations
- A training schedule and a requirement for the initial training of appropriate staff, with refresher training every three (3) years

Specific program goals for the IDEP are provided in Table below:

Illicit Discharge Elimination Plan (IDEP)

Goal	Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
Field Verification	Reconfirm the number of outfalls and points of discharge within the MS4. In 1995, under the Phase I permit application process, a consultant to the City supposedly inspected all outfalls within the municipal separate storm water drainage system. Since then the City staff have revisited all 268 outfalls as defined in the original permit. The results of those inspections yielded a change in the number of outfalls to be permitted and monitored under the renewed permit. 78 locations were determined not to be outfalls to waters of the State or a County Drain from a City storm sewer, but instead to be locations within the City storm sewer system. Of those 78, 62 locations were released from further monitoring by the EGLE during permit renewal discussions in 2001. 16 locations were investigated further to determine if they needed to remain in the permit. When the 2008 COC was issued, the City revisited the definition of an outfall and concluded that the 177 permit points were not inclusive of all locations that should be permitted. Actions are ongoing to locate and screen the original locations and those that should be added. The City determined the total number of outfalls/points of discharge upon completion to be 801.	Warren	To be addressed in the initial annual report of the permit cycle	Summarized in annual report and listed in Appendix A supplementing the SWMP.
	Verify new outfalls associated with new construction.	Warren	Ongoing throughout permit period	Summarized in annual report.
Map Updates	Warren will annually update the outfall map with newly constructed or newly identified point sources.	Warren	Annual Report	Incorporate the results of investigations outlined throughout the IDEP

Goal	Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
Dry Weather Screening (Prioritizing)	During dry weather, the City will re-inspect and monitor the outfalls and points of discharge where both flow and a sample parameter was found when the Part 1 sampling program was conducted. The following data is collected: the site ID; the date and time of the inspection; qualitative data consisting of odor, oil sheen, and other observations; quantitative data consisting of E.coli testing, and estimated flow rate; date of last storm; and the amount of rainfall in the last storm.	Warren	Completion of prioritized outfalls is expected by end of the first year of the permit cycle. Dry weather screening (DWS) of all outfalls/points of discharge to be completed by end of the permit cycle.	# of outfalls that have a chronic problem
	If screening indicates a suspect illicit discharge/connection, a sample will be collected for analyzed for <i>E. coli</i> . Elevated results will require additional investigation. Further drainage system and sub-system investigation proceeds up stream based on the rankings of the pollutants found in the samples. Those falling into category one are investigated first, those falling into category two are investigated next, etc.	Warren	Ongoing throughout permit period	Summary of samples taken and results in annual report.
	The City will review previous records including: past complaints, smoke-testing studies, in-pipe video camera inspections, or past actions to disconnect an illicit connection, existing land use information, and industrial or commercial uses which may be a part of the City's pretreatment program in the outfall service area. This will aid in determining the probable drainage area where the illicit connection is located.	Warren	Current Practice	Include results in annual report.
	The City will perform manhole to manhole upstream inspections (and sample as needed) on the high-probability sub-drainage areas to determine the location of the illicit connection.	Warren	Current Practice	Summary of samples taken and results in annual report.

Goal	Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
Notification Procedures	Once the manhole inspection and testing program has narrowed the outfall area to a single manhole, source testing will be necessary. Sites which test positive will receive a Notice of Violation (NOV) and have a set period of time per Ordinance to correct the violation(s). Facilities that are found to not have a direct illicit connection to the storm sewer system but which are causing pollution in the storm sewer system through storm runoff will be cited to correct the problem.	Warren	Current Practice	- # of illicit connections verified - # of NOV's issued
	1.) A notice of violation (NOV) will be prepared and sent via registered mail to the property owner from whom the illicit connection has been confirmed. The MCPWO will receive a copy of each NOV as all storm sewers in Warren ultimately discharge to a County Drain	Warren	Current Practice	- # of NOV's issued - correspondence to be included in Annual Report
	2.) Should an illicit connection be identified by City crews to be discharging directly to a County Drain, the Public Works Office will be notified by phone the same day, with follow up correspondence describing the connection, location, and type of discharge, sent via regular mail shortly thereafter.	Warren MCPWO	Current Practice	- # of NOV's issued - correspondence to be included in Annual Report
Goal	Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms

	3.) If an illicit discharge is identified from a malfunctioning septic tank, a NOV will be sent as in #1 above, and a copy of the NOV forwarded to the Macomb County Health Department. If the illicit discharge can be rectified by connection to an available City sanitary sewer, the City of Warren will provide the lead in enforcing the needed correction. If City sewer is not available; the City will defer to the Health Department for enforcement of the needed corrections.	Warren MCHD	Current Practice	- # of connections to City sanitary sewer - # of NOV's sent to MCHD
	4.) Should an illicit connection be identified as originating in or from a sewer under the jurisdiction of the Michigan Department of Transportation (MDOT) or the Macomb County Department of Roads (MCDOR), the Warren/Sterling Heights MDOT TSC or MCDOR will be notified as in #2 above.	Warren MDOT MCDOR	Current Practice	- # of NOV's issued - correspondence to be included in Annual Report
	5.) If the defect causing the illicit discharge is determined to be in City right-of-way, and if the defect is due to deteriorated City utilities or a situation for which direct responsibility cannot be assigned to a particular party, the City of Warren Water Division will be notified of the situation, and will perform the needed correction.	Warren	Current Practice	- # of corrections performed - Results to be included in Annual Report

Notes:

For IDEP purposes, dry weather is considered to be, at a minimum, 48 hours without precipitation or snow melt to ensure observation of only dry weather flows.

All dye testing will comply with EGLE requirements.

Illicit Discharge Elimination Plan (IDEP)

Goal	Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
I. Active Illicit Connections – A direct connection to the storm sewer system that is continuously or frequently conveying an illicit discharge.	1.) Volume of illicit discharge.	Warren	As identified	All eliminated illicit discharges/connections will be documented in the annual report. Additionally, the prioritization and/or elimination schedule for any existing illicit discharges/connections will be provided in the annual report.
	2.) Relative concentration or “strength” of illicit discharge.			
	3.) Known water quality concerns in the receiving waters as reported by the MCHD. Further prioritized (if 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.			
II. Active Illicit Seepage – An illicit discharge that is not the result of an illicit connection and does not represent a sustained, concentrated illicit discharge.	1.) Volume of illicit discharge.	Warren	As identified	All eliminated illicit seepage will be documented in the annual report. Additionally, the prioritization and/or elimination schedule for any existing illicit seepage will be provided in the annual report.
	2.) Relative concentration or “strength” of illicit discharge.			
	3.) Known water quality concerns in the receiving waters as reported by the MCHD. Further prioritized (if 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.			

Goal	Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
Responsibility	Warren will work with the property owner to correct the discharge. Warren will verify if the illicit discharge was caused by past city action or inaction and repair as needed in City right of way. On-site illicit connections that are determined to have occurred due to private action or inaction will be repaired by the Property owner on site.	Warren Property Owner	As-located, and as city resources allow. Private Property repairs –90 day ROW repairs –180 days	Report corrective actions completed in annual report.
Verification	Upon completion of corrective actions, Warren will conduct a follow up dye test to confirm correction.	Warren	As identified	Report verification in annual report.
Sanitary Sewer Maintenance	Maintenance and inspection of existing sanitary sewers. This includes the following activities, as necessary: jet cleaning, manhole inspections, closed circuit television (CCTV) inspections.	Warren	As personnel and funding allow	Report maintenance activities in annual report. (Ex. miles cleaned or inspected, # of manholes inspected, etc.)
	Routine maintenance and inspection of existing sanitary sewers identified as “problem” areas. This activity will include increased frequency of jet cleaning. “Problem” areas will be determined based on outfall screening, proximity of sanitary sewer to storm sewer, the integrity of sanitary sewer and log of residential sewer complaints (filed by street)	Warren	Performed as needed based on indicators of cross-flow between the sanitary and storm sewers	- # of “problem areas” jet cleaned
Sanitary Sewer Rehabilitation	Rehabilitation of sanitary sewers. Sanitary sewers will be prioritized based upon routine maintenance and inspection. Rehabilitation efforts may include: grouting, cured-in-place pipe (CIPP) lining and replacement.	Warren	Performed as need identified and funding allows.	Document method and location of any rehabilitation efforts in annual report.

Goal	Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
New Construction of Sanitary Sewer	New sanitary sewers must pass low-pressure air testing witnessed by City personnel, prior to acceptance by Warren	Fund & perform testing & inspection – Contractor or Developer Witness & acceptance – Warren	Prior to acceptance of any new sanitary sewer	Document new sewers constructed and accepted in annual report.
OSDS Identification	MCHD and Warren will dye test all known septic fields to determine performance and risk to nearby storm sewers	MCHD Warren	Initially Completed in 2001	Report problems identified in annual report.
OSDS Correction	Warren will work with the property owner to correct and eliminate the source of the illicit discharge associated with failing OSDS. Extension of City sanitary sewer will be performed by the City if needed.	Responsible for correction and associated costs – Property Owner, Warren	Current Practice - as identified	Document corrective actions in annual report.
OSDS Verification	Follow up inspections will be performed by Warren IDEP, and reported to MCHD	Warren	As identified	Report verification in annual report.
Legal Authority	City of Warren Storm Water Ordinance 80-497 adopted July 9, 1996. Amended as Ordinance 80-734 on November 24, 2015. Amended as Ordinance 80-752 on February 2017. Amended as Ordinance 80-781 on January 28, 2020 and further as Ordinance 80-796 on November 23, 2021.	Warren	Current Practice	Not applicable
Regulate the contribution of pollutants to the drainage system	Section 41-140 (b) of Division 4. Storm Sewers of the City's Code of Ordinances defines acceptable discharges to the City's drainage system. All other discharges not defined are treated as illicit, and are prohibited except as permitted by section 41-60 of this chapter.	Warren	Current Practice	Not applicable

Goal	Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
Prohibit illicit connections and illicit discharges	Section 41-140 (b) of Division 4. Storm Sewers of the City of Warren Code of Ordinances gives legal authority to prohibit illicit connections and discharges including the direct dumping or disposal of materials other than stormwater into the drainage system.	Warren	Current Practice	Not applicable – ordinance is currently enforced
Require compliance with ordinances, permits issued by the permittee, contracts or orders	Section 41-161 through 41-170, Division 5. Enforcement of the City of Warren Code of Ordinances provide the means for enforcing compliance with the City's Storm Water Ordinance.	Warren	Current Practice	Not applicable – ordinance is currently enforced
Conduct all inspections, surveillance and monitoring procedures necessary to determine compliance with ordinances, permits issued by the permittee, contracts, orders, and the terms and conditions of this permit.	Section 41-145 through 41-150 of the City's Storm Water Ordinance Division 4. Storm Sewers of the City of Warren Code of Ordinances provide the mechanism for performing all inspections necessary to ensure compliance with the primary ordinance.	Warren	Current Practice	Not applicable – ordinance is currently enforced

City of Warren
Storm Water Management Program (SWMP)

Appendix D
Policy, Ordinances and Regulations

City of Warren

Storm Water Management Program (SWMP)

Appendix E

Pollution Prevention and Good Housekeeping (P2GH)

E.0 Introduction

This section provides a description of specific source control Standard Operating Procedures (SOPs) for activities related to the City's DPW operations.

As noted in Sections 1, City fixed facilities conduct activities that have the potential to generate pollutants. The source control SOPs in this section address these activities (see Table 2- 1). In addition, the DPW conducts various field programs where activities may occur and create pollutants (see Table 2).

SOP Fact Sheet

Each SOP fact sheet is a short document that gives all the information about a particular BMP. The fact sheets contain side bar presentations with information on objectives and targeted constituents.

Table 2-1 Municipal Fixed Facility SOPs	
DPW/Water Garage SWPPP	Spill Prevention, Control and Cleanup
DPW/Water Garage SWPPP	DPW Sewer Vactor Operation
DPW/Water Garage SWPPP	Vehicle and Equipment Fueling
DPW/Water Garage SWPPP	Vehicle and Equipment Cleaning
DPW/Water Garage SWPPP	Vehicle and Equipment Repair
DPW/Water Garage SWPPP	Outdoor Container Storage
DPW/Water Garage SWPPP	Outdoor Equipment
DPW/Water Garage SWPPP	Outdoor Storage of Raw
VII.81	Waste Handling and Disposal
DPW/Water Garage SWPPP	Building and Grounds
DPW/Water Garage SWPPP	Parking Lot Maintenance
DPW/Water Garage SWPPP	Safer Alternative Products
Table 2 Municipal Field Program SOPs	
VII.71, VII.78	Road and Street
DPW/Water Garage SWPPP	Salt Application and Storage
VII.71	Drainage System
DPW/ SWMP	Sewer Maint
DPW/Water Garage SWPPP	Reporting and Recordkeeping

Staff Training

DPW and other maintenance staff will be trained on storm water pollution prevention at least once per permit cycle. New employees will be trained within the first year of employment. Employees will be trained using specific web based videos for storm water operations staff. All topics related to storm water pollution prevention/good housekeeping of City facilities and activities will be covered during the training.

City of Warren
Storm Water Management Program (SWMP)

Appendix F

Action Plan

Post Construction Storm Water Management Program for New Development and Redevelopment Projects

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>New Developments and Redevelopment that Discharge to MDOT or Macomb County Sewers</u> The sewers will be sized to convey the 10 year, 1 hour design storm. The outlet rate is set by the agency with ownership of the receiving sewer.	MDOT MCDOR MCPWO Warren	Current Practice	- # of permits issued - # of on-site retainage facilities
<u>New Developments that Discharge to Local Sewers Discharge Rates</u> The City adopted the Macomb County Standards for new development on parcels one acre or larger or on parcels that are part of larger develop that will disturb one or more acres in total.	Warren	Adopted as Ordinance 80-734 on November 24, 2015. Current Practice	Adoption and enforcement of Macomb County Standards
<u>New Development Storm Sewer Design that Discharge to Local Sewers</u> The City will require all storm sewers to be designed to convey the 10 year one hour design storm.	Warren	Current and proposed practice under Ordinance 80-734 adopted November 24, 2015.	- # of permits issued - # of on-site retainage facilities

Post Construction Storm Water Management Program for New Development and Redevelopment Projects

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>SESC Measures</u> The City requires every site that is newly developed or redeveloped to obtain a SESC permit from the MCPWO, and to establish vegetation on disturbed areas as soon as practical, weather permitting.	MCPWO Warren	Current Practice – Implemented as new projects are submitted	Number of permits issued
<u>Approved Outlets</u> The City requires that all new developments have an internal drainage system that connects to a public storm sewer	Warren	Current Practice – Implemented as new projects are submitted	Number of taps to public storm sewer
<u>Catch Basins</u> The city requires all newly constructed catch basins have a minimum 2 foot deep sump.	Warren	Current Practice – Implemented as new projects are submitted	Number of catch basins with sumps installed each year

<u>Site Drainage Requirements</u> The City requires all runoff generated on the site travel through the required internal drainage system and not to offsite properties	Warren	Current Practice – Implemented as new projects are submitted	Number of sites approved
Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>Sediment and Debris Removal at New and Redeveloped Sites</u> The City will require BMP technology for 80% sediment and debris removal from parcels with disturbed areas greater than 1 acre in size	Warren	Ordinance 80-752 adopted on February 28, 2017 Current Practice – Implemented as new projects are submitted	Amount of sediment and debris removed
<u>Discharge Rates and Stormwater Storage</u> The City will require a rate of discharge control pursuant to the Channel Protection provisions of the SWMP on new development, in conjunction with applicable BMP's that function in concert with forced stormwater storage.	Warren	Ordinance 80-752 adopted on February 28, 2017 Current Practice – Implemented as new projects are submitted	Number of sites with a controlled discharges <i>and</i> BMP's that facilitate storage

Post Construction Storm Water Management Program for New Development and Redevelopment Projects

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>New Structural BMP's</u> Each approved new structural BMP will be logged in a database at the Public Service Department/Engineering Division	Warren	Ordinance 80-752 adopted on February 28, 2017 Current Practice – Implemented as new projects are submitted	- # of structural BMP's
<u>BMP Maintenance</u> The property owner will be required to maintain a log of all maintenance of the particular BMP, consistent with type of technology being utilized.	Warren MCPWO	Ordinance 80-752 adopted on February 28, 2017 Current Practice – Implemented as new projects are submitted	- Maintenance logs will be included in Annual Report
<u>BMP Inspection and Enforcement</u> An inspection of each BMP will be performed by a representative of the Public Service Department at least once every two years. Any site deficiencies observed, or failure to maintain log or the BMP in accordance with the site plan or building permit approval will be treated as a violation of the City's stormwater ordinance, and enforcement of the needed corrections will proceed per that ordinance	Warren	Ordinance 80-752 adopted on February 28, 2017 Current Practice – Implemented as new projects are submitted	- # of deficiencies will be included in the Annual Report

Post Construction Storm Water Management Program for New Development and Redevelopment Projects

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>Preliminary Site Plan Reviews for BMP's</u> When required by MDOT, MCDOR or sometimes the City, guidelines for the amount of storage, or outlet rate, or stormwater quality control are given to each developer at the time the concept for the development is approved by the Planning Commission.	MDOT MCDOR Warren MCPW	Current Practice	Number of sites approved with BMP's
<u>Building Permit Applications</u> At the time of building permit application, the design details of the required outlet control, and storage area, are reviewed by the jurisdiction with authority over the storm sewer connection, and any required changes worked out between the City and developer.	MDOT MCDOR Warren MCPWO	Current Practice	Number of building permits issued with BMP's
<u>City Site Plan Requirements for BMP's</u> City BMP requirements would be included in the Site Plan Requirements information packet distributed by the Planning Department, to all prospective developers.	Warren	Current Practice	Number of reviewed site plans

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>Preliminary Site Plans Showing BMP's</u> Potential developers would be required to show all stormwater outlet controls, storage areas, and other BMP's on the preliminary site plan submitted for Planning Commission approval.	Warren	Adopted as Ordinance 80-752 on February 28, 2017 Current Practice	- # of site plans with BMP's
<u>City Preliminary Site Plan Approval</u> Preliminary site plan approval would include language detailing the type of outlet control, storage, or other BMP required as a condition of development.	Warren	Adopted as Ordinance 80-752 on February 28, 2017. Current Practice	- # of site plans with BMP's
<u>City Building Permit Requirements</u> Prior to issuance of a final building permit, the design details of the required outlet control, and storage area, would be reviewed by the Engineering Division and any required changes worked out between the City, or other permitting agency, and the developer	Warren	Adopted as Ordinance 80-752 on February 28, 2017. Current Practice	- # of building permits issued requiring BMP's

Post Construction Storm Water Management Program for New Development and Redevelopment Projects

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>Commercial and Industrial Facilities</u> The City's Building and Engineering Divisions enforce the "Michigan Building Code" for Commercial and Industrial permit review and construction.	Warren	Current Practice	Number of permits issued for commercial and industrial facilities
<u>Stormwater Compliance Review</u> A separate storm water compliance review will be implemented at the time of building permit application which will require the applicant to: a. Submit a written description of all daily processes that will take place outside of the building, and show the locations of these processes on the site plan. b. List all materials that will be stored outdoors, and show the storage methods and locations of each different material on the site plan.	Warren	Ordinance 80-752 adopted on February 28, 2017 and Ordinance 80-796 adopted on November 23, 2021 Current Practice	# of reviews completed # of building permits issued

Construction Stormwater Runoff Control

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>Site Plan Reviews</u> Construction Permits are not issued until the MCPWO is satisfied with the proposed erosion and sedimentation control measures	MCPWO Warren	Current Practice – as new projects are submitted	Number of permits issued
<u>New Construction and Site Redevelopment</u> The City requires that all new construction and site redevelopment obtain a Soil Erosion and Sedimentation Control (SESC) Permit from the Macomb County Public Works Office prior to obtaining a permit from the City.	MCPWO Warren	Current Practice	Number of permits issued
<u>Complaint Hotline</u> The City of Warren has a central complaint agency called the “Service Division.” At (586) 574-4662. Complaints of any kind, including SESC complaints, are routed through that office and dispersed directly to the responsible City Department or Departments. Also, REPORT-A-POLLUTER If you see illegal dumping into a street storm drain, a ditch, or a creek Call Macomb County Public Works Commissioner’s HOTLINE at 1-877-679-4337 and report the activity	Warren	Current Practice	Number of complaints received and addressed
<u>SESC Deficiencies</u> All current Engineering Division inspectors are certified storm water operators, and are trained to look for deficiencies in soil erosion control practices. Observed deficiencies in SESC practices are reported immediately to the site manager if available, and the MCPWO	Warren MCPWO	Current Practice – Based upon observation	Number of deficiencies reported

Pollution Prevention and Good Housekeeping Activities

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>Catch Basin Inspections</u> Repair or Replace defective and storm sewer catch basin structures Verify Ownership (Private, Public) and Agency responsible for catch basins in the City and update in GIS.	Warren	Current Practice – 17 % of the catch basins to be inspected each year. Deteriorating catch basins are repaired annually or biannually as funding allows	Number of structures rehabilitated and nature of improvements
<u>Roadside Ditch Maintenance</u> Scrape and excavate roadside ditches to reestablish grade and maintain proper drainage.	Warren	Current Practice – on an as-needed basis	- volume of spoils delivered to DPW
<u>Detention Pond Maintenance</u> Maintain two existing dry stormwater detention basins 1. Denton/Miller 2. Dimas/Mary Ann	Warren	Current Practice – City mows as needed	To date, no sediment has been removed, however, if sediment is accumulated, it will be removed and documented in annual report
<u>Storm Sewer Maintenance</u> Jet and clean storm sewers with vector trucks to allow the conveyance of stormwater	Warren	Current Practice – On an as-need basis	- volume of debris dumped at the WWTP

Pollution Prevention and Good Housekeeping Activities

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>Catch Basin Cleaning Program</u> Clean catch basin sumps with Vactor Truck	Warren DPW	Current Practice – each catch basin is cleaned once every Six years	- # of sumps cleaned - volume of sediment delivered to the City's WWTP
<u>Street Sweeping Program</u> All city streets will be swept to reduce sediment and accessory pollutants to the City's MS4 and Macomb County's drainage system.	Warren DPW	Current Practice – each city street is swept three times a year	Amount of debris and sediment collected
<u>Deicing Practices</u> The City stores salt under a dome on City property and the salt is applied according to MDOT standards. Residential streets may not even be plowed or receive a salt application depending on the duration of the ice or snow conditions and the magnitude of problems.	Warren	Current Practice – As needed, weather dependent.	Amount of salt dispersed by DPW

Pollution Prevention and Good Housekeeping Activities

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanisms
<u>Vehicle Maintenance</u> All fleet maintenance will be performed inside the City's DPW garage, Sanitation garage, or Water Division garage so no fluids or greases are discharged to the storm sewer system.	Warren	Current Practice	Not applicable. Any changes in practice will be noted in Annual Report.
<u>Proper Disposal of Wash Water</u> The City owns and operates an indoor commercial-style fleet car wash with automatic wash systems, and manual wand type systems where all city vehicles and equipment are cleaned.	Warren	Current Practice – As needed	Volume of material collected. Number of and type of washes recorded.
<u>Catch Basin Labeling</u> All new catch basins covers and/or outfalls will be labeled "Dump No Waste! Drains to Waterways" with a medallion on the curb or other approved identifier	Warren	Beginning in 2006 Labeling applied during annual catch basin repair program	Number of catch basins repaired annually.

Pollution Prevention and Good Housekeeping Activities

Actions/Commitments	Lead Agency	Schedule	Evaluation Mechanism
<u>Flood Control Projects</u> New flood management projects shall assess the impacts on the water quality of the receiving water(s)	Army Core of Engineers, Red Run Drain Authority, MCPWO	Current Practice – as new projects are submitted	Number of permits submitted for flood management control structures.
<u>City Right-Of-Way</u> A DPW foreman will visit and evaluate each location to determine the necessity of applying herbicides. If herbicides are required, only weed killer will be applied.	Warren DPW and Licensed Contractor	As needed based upon observation, but not to exceed the number of applications established by Federal and State regulations.	The annual City contract for application of weed killer will be included in each annual storm water report for review.
<u>Park Properties, City Building Maintenance</u> A DPW foreman will visit and evaluate each location to determine the necessity of applying weed killer. Annual soil testing will be performed and fertilization will be dependent upon	Warren DPW and Licensed Contractor	Herbicide application will be on an as needed based upon field observation, but not to exceed the number of applications established by Federal and State regulations. Fertilizer will be applied if needed after an annual soil test of each property.	The annual City contract for application of weed killer and fertilizer will be included in each annual storm water report for review.
<u>Private Properties</u> Permittee does not control use of these products on private property, unless the overuse becomes a point source issue in the public storm sewer	Warren IPP Team	During annual inspections	Number of facility inspections.