

Waverly Community Schools



STORMWATER MANAGEMENT PROGRAM PLAN

Prepared By:



Table of Contents

Contents

1.0	Introduction.....	1
1.1	Regulated Area	2
1.2	Outfalls & Discharge Points/ Receiving Waters	2
1.3	Enforcement Response Procedures.....	4
2.0	Stormwater Management Program Plan (SWMP) Six Minimum Management Measures	4
2.1	Public Involvement and Participation Program (PPP).....	4
2.2	Public Education Program (PEP)	7
2.3	Illicit Discharge Elimination Program (IDEP)	11
2.4	Construction Site Stormwater Runoff Control Program	23
2.5	Post Construction Stormwater Controls for New Developments & Redevelopments	27
2.6	Pollution Prevention/Good Housekeeping Program	32
3.0	Training.....	49
3.1	Training Table	50
4.0	Total Maximum Daily Load (TMDL) Restrictions	51
4.1	What are TMDLs?	51
3.2	Carrier Creek Sub Watershed – Grand River	51
3.3	Grand River	52
3.4	TMDL Implementation – Monitoring Plan	52

Appendices

Appendix “A”	Outfall/Discharge Point Receiving Water Table & Site Stormwater Structure Maps
Appendix “B”	Post Construction Stormwater Runoff Program Policy, School Board Policy Resolution, and Procedures & Municipal Separate Storm Sewer System Noncompliance Enforcement Tracking Sheet
Appendix “C”	Greater Lansing Regional Committee for Stormwater Management’s PEP Plan & Posters
Appendix “D”	Inspection Field Worksheets & Stormwater Sampling and Analysis Protocol for School District MS4 Clients (SOP-101)
Appendix “E”	Illicit Discharge Illegal Spill Reporting Form

Stormwater Management Program Plan

1.0 Introduction

This Stormwater Management Plan (SWMP) has been developed, to reduce the discharge of pollutants from the MS4 to the Maximum Extent Practicable and protect water quality in accordance with the appropriate water quality requirements of Michigan Act 451, Public Acts of 1994, Part 31, and the Federal Water Pollution Control Act, as amended, (33 U.S.C. 1251 et seq.). Waverly Community Schools (WCS) will implement and enforce this SWMP to the Maximum Extent Practicable. In order to retain the authorization to discharge, WCS is required to submit this plan with the “NPDES Application for Discharge of Stormwater to Surface Waters from a Municipal Separate Storm Sewer System (MS4)”.

This Stormwater Management Plan commits to actions throughout the permit cycle. This SWMP includes measurable goals for Best Management Practices (BMP), focusing on the six minimum measures. Measureable goals describe the actions WCS will take to implement each BMP and allow WCS to evaluate progress toward meeting key objectives outlined in the following sections.

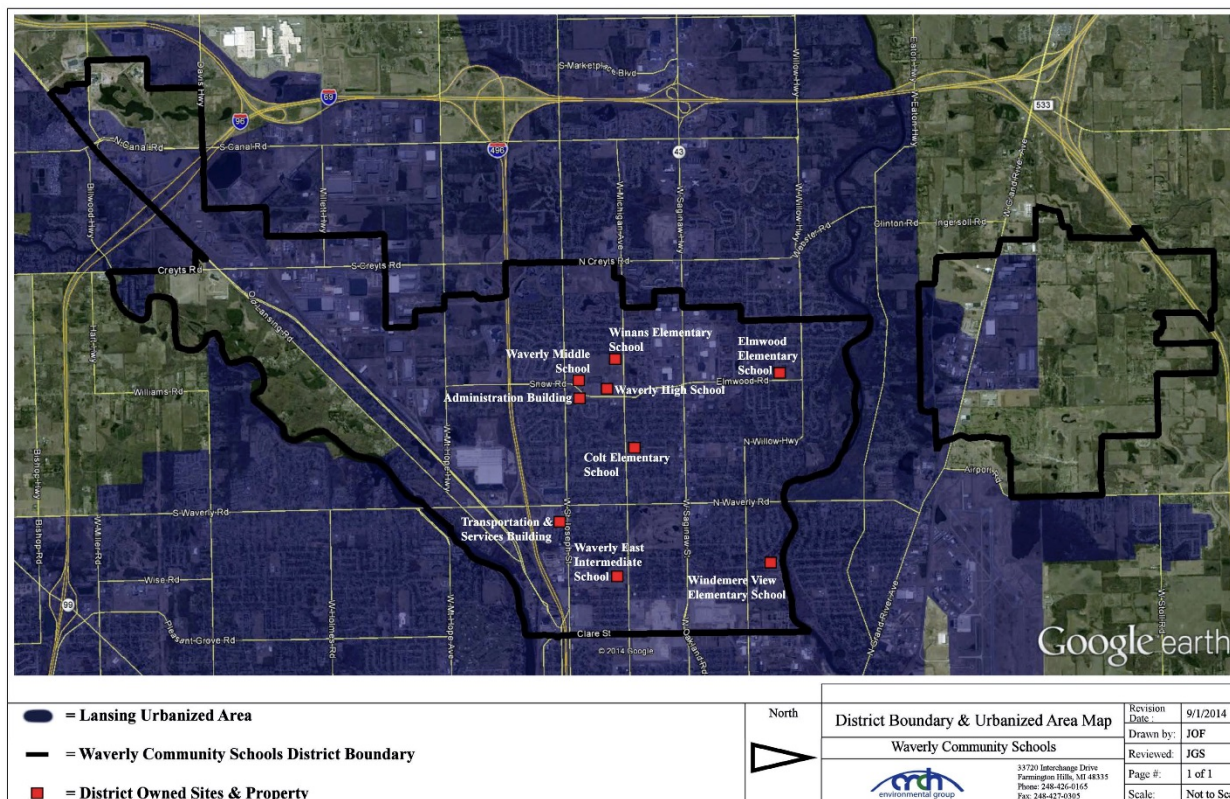
WCS owns and operates nine (9) public facilities within the boundaries of the “Lansing Urbanized Area”. All of WCS properties are within the urbanized area based off of the 2010 Census data, and the facilities include:

1. Administration Building
2. Colt Elementary School
3. East Intermediate School
4. Elmwood Elementary School
5. Transportation & Maintenance Facility
6. Waverly High School Campus
 - Waverly High School
 - Waverly Middle School
 - Winans Elementary School
7. Windemere View Elementary School

1.1 Regulated Area

A jurisdictional boundary map identifying the WCS urbanized area as defined by the 2000 Census is provided below in Map 1.

Map 1 – District Jurisdictional Boundary Map – Urbanized Area¹



1.2 Outfalls & Discharge Points/ Receiving Waters

The general permit authorizes the discharge of stormwater from municipal separate stormwater drainage systems to waters of the state from all existing outfalls or points of discharge.

Waverly Community Schools has identified outfalls that discharge directly into surface waters of the state and discharge points that discharge into other MS4 drainage systems. Waverly Community Schools' drainage system discharges directly or indirectly into the following surface water bodies:

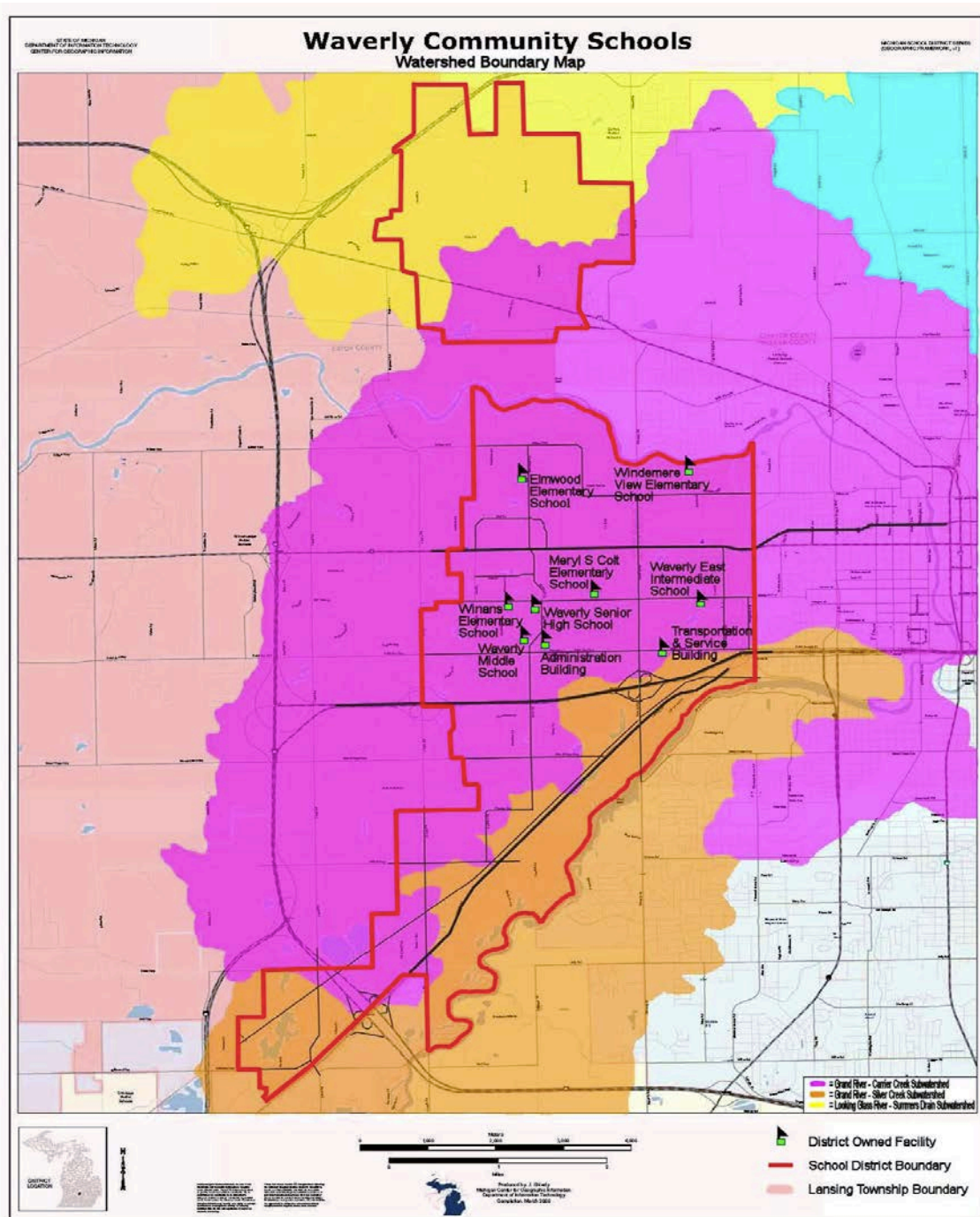
- Carrier Creek sub-watershed of the Grand River Watershed
- Silver Creek sub-watershed of the Grand River Watershed
- Summers Drains sub-watershed of the Looking Glass Watershed

WCS has completed site specific storm sewer system maps which identify outfall and discharge locations, discharge point source identification numbers, locations of discharge and receiving waters. A receiving water table and site

¹ Urbanized area boundary based on U.S. Census Bureau 2010 Urban Area Reference Maps.

specific storm sewer system maps are provided in Appendix “A”. The district watershed boundary map is provided in below in the map listed as “Map 2”.

Map 2 – District Watershed Map²



² Watershed boundaries based on Environmental Protection Agency MiWaters Mapper National Hydrography Dataset Mapper 12-Digit Watersheds.

1.3 Enforcement Response Procedures

WCS is committed to practicing sound stormwater management practices; including observance and adherence to all local, state, and federal stormwater statutes, rules, and regulations. Enforcement of the policies, procedures, and best management practices (BMPs) outlined in this SWMP is the responsibility of the district Superintendent or their designee. WCS had developed and passed a School Board Resolution requiring the district comply with the requirements of the Michigan National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit. Any questions regarding this policy and procedure should be directed to the Stormwater Manager. This procedure will be reviewed on an annual basis by the Stormwater Manager for any updates. In addition to the enforcement mechanisms noted in ordinance, additional tracking of instances of noncompliance occurs and includes the following information:

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

A copy of the approved resolution is included with and an example of the Municipal Separate Storm Sewer System Noncompliance Enforcement Tracking Sheet in Appendix "B".

2.0 Stormwater Management Program Plan (SWMP) Six Minimum Management Measures

This SWMP has been developed to describe the Best Management Practices (BMPs) WCS will implement to meet the six minimum control measures and water quality requirements. The six minimum control measures include:

- **Public Participation/Involvement Program (PPP)**
- **Public Education Program (PEP)**
- **Illicit Discharge Elimination Program (IDEP)**
- **Construction Stormwater Runoff Control Program**
- **Post Construction Stormwater Runoff Program**
- **Pollution Prevention/Good Housekeeping Program**

Each BMP includes a measurable goal, implementation schedule, and measure of assessment.

2.1 Public Involvement and Participation Program (PPP)

Engaging and empowering the public in the effort to reduce the impacts of stormwater runoff is a key element of the public involvement/participation program.

2.1.1 Public Involvement and Participation Program Objectives

1. Process for making the Stormwater Management Plan available for public inspection and comment.

2. Process for inviting public involvement and participation in the implementation of SWMP best management practices and periodic review of the SWMP.

2.1.2 Public Involvement and Participation Program Procedure

1. The SWMP will be posted on the WCS webpage for review and comment by the public when the application is submitted to the MDEQ. The stormwater webpages will include the contact information to forward comments.
2. The public will be notified through announcements or newsletters that a copy of the SWMP is available on the WCS stormwater webpage.
3. A public survey has been developed and placed on the WCS stormwater webpage in an effort to provide input into stormwater implementation.
4. Cooperation with local watershed protection groups.

2.1.3 Public Involvement and Participation Assessment

1. WCS will review the public involvement & participation BMPs as part of annual SWMP review to determine level of district involvement and identify areas of improvement.

2.1.4 Public Involvement & Participation Program BMP Table

BMP	Implementation of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #1 Public notice of SWMP	Make SWMP available for public review through stormwater webpage.	Annually Throughout Permit Cycle	Public notice published in annual district wide newsletter announcing the availability of the SWMP for review, including contact information for comments.	Verify SWMP available on stormwater webpage, and track changes webpage posting of SWMP.	WCS
	Notification in annual district newsletter to publicize updated SWMP and locations for review.			Keep copy of official SWMP posting notifications.	
	Contact information will be available on the stormwater webpages to forward comments regarding the SWMP.			Compile and track comments from the public.	
BMP #2 Stormwater Education Program Survey	Post survey on district website.	Annually Throughout Permit Cycle	Survey posted on the stormwater webpages and link maintained throughout the permit term to assess community knowledge and provide input into stormwater implementation.	Results of completed surveys.	WCS
BMP #3 Cooperation with local watershed protection group.	Engage the Greater Lansing Regional Committee for Stormwater Management to collaborate with WCS in Public education services.	Ongoing Throughout Permit Cycle	Maintain service agreement with the Greater Lansing Regional Committee for Stormwater Management.	Copy of the agreement.	WCS
BMP #4 Public Involvement & Participation Program Assessment	Evaluate the effectiveness of the public involvement program.	Annually Throughout Permit Cycle	Complete as part of annual SWMP review to determine level of district involvement and identify areas of improvement. Program activities may be adjusted based on the results of the assessment.	Copies of annual SWMP review noting any areas of needed improvement.	WCS

2.2 Public Education Program (PEP)

WCS' "Public Education Program (PEP)" is designed to promote, publicize, and facilitate education for the purpose of encouraging the public to reduce the discharge of pollutants into the WCS separate storm sewer system.

The term "Public" as referred in to in this program is defined to include all persons who could potentially affect the quality of stormwater discharges from WCS properties including but not limited to WCS faculty, staff, contractors, and students of WCS, as well as area residents, visitors, public employees, local businesses, industries, construction contractors and property developers. This PEP will include a variety of mechanisms and venues to provide watershed awareness and pollution prevention education throughout the WCS jurisdiction.

2.2.1 Public Education Program (PEP) Objectives

1. Responsibility and stewardship in their watershed.
2. Inform and educate the public about the connection of the MS4 to area waterbodies and the potential impacts discharges could have on surface waters of the state.
3. Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4.
4. Promote preferred cleaning materials and procedures for car, pavement, and power washing.
5. Inform and educate the public on the proper application and disposal of pesticides, herbicides, and fertilizers.
6. Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter the MS4.
7. Identify and promote the availability, location, and requirements of facilities for collection or disposal of household hazardous wastes, travel trailer sanitary wastes, chemicals, yard wastes, and motor vehicle fluids.
8. Inform and educate the public on proper septic system care and maintenance, and how to recognize system failure.
9. Promote methods for managing riparian lands to protect water quality.
10. Identify and educate commercial, industrial, and institutional facilities about good housekeeping.
11. Provide training for staff.

2.2.2 Public Education Program Procedure

WCS and the Greater Lansing Regional Committee for Stormwater Management (GLRC) are working cooperatively to promote citizen awareness and facilitate public awareness activities. WCS has entered an agreement for services with the GLRC to provide all relevant public education activities during the permit cycle. A copy of the GLRC's Public Education Plan is provided in Appendix "C". Additionally, copies of the GLRC's Public Education Posters are provided in Appendix "C".

WCS has joined the GLRC along with others to help reduce pollutant through collaborative efforts. WCS is implementing the GLRC's PEP, and these activities are outlined in [2.2.3 Public Education Program BMP Table](#). Please see the attached GLRC for Stormwater Management PEP located in Appendix "C"

2.2.3 Public Education Program BMP Table

BMP/Topic	Implementation BMP	Timeframe	Measurable Goal (or WMP goal)	Evaluation Method/Record Keeping	Target Audience	Responsible Party
BMP #1 Promote public responsibility and stewardship in the applicant's watershed(s).	Continue to maintain watershed signage at road and river crossings. Promoting local water resources, connecting the public to their surrounding environment. Signs read "You are in the Grand River, Looking Glass, or Red Cedar River Watershed".	Bi-Annually Throughout Permit Cycle	Place watershed signage at road and river crossings as directed by the GLRC.	Document the number of signs.	Students, staff, faculty and visitors to school buildings	WCS /GLRC
	GLRC Poster Placement.		Posters placed strategically throughout the district. Locations may include, Main Office/Foyer, Teacher's Lounge, and Custodial Office.	Document the number of posters/tip cards distributed in each facility.		
	Post watershed articles in District newsletters.		Place watershed articles provided by the GLRC in District newsletters.	Document number of articles placed in newsletters.	Students, staff, faculty and all community members	WCS /GLRC
BMP #2 Inform and educate the public about the connection of the M4 area waterbodies and the potential impacts discharges could have on surface waters of the state.	GLRC Quarterly Newsletters	Bi- Annually Throughout Permit Cycle	Distribute GLRC Quarterly Newsletters to District employees.	Document the number GLRC Quarterly Newsletters forwarded to District Employees.	Facility and Staff	WCS /GLRC

BMP/Topic	Implementation BMP	Timeframe	Measurable Goal (or WMP goal)	Evaluation Method/Record Keeping	Target Audience	Responsible Party
BMP #3 Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4	Publicize 24-hour environmental hot-line phone numbers and instructions for reporting spills, illicit discharges, or connections on webpage.	Ongoing Throughout Permit Cycle	Continuous posting of reporting numbers on the website.	Annual verification of website posting.	Students, staff, faculty and all community members	WCS /GLRC
BMP #4 Promote preferred cleaning materials and procedures for car, pavement, and power washing.	GLRC Poster Placement.	Ongoing Throughout Permit Cycle	Posters placed strategically throughout the district. Locations may include, Main Office/Foyer, Teacher's Lounge, and Custodial Office.	Document the number of posters distributed in each facility.	Students, staff, faculty and all community members	WCS /GLRC
BMP #5 Inform and educate the public on proper application and disposal of pesticides, herbicides, and fertilizers.	Maintain information on District webpage describing the impact that bad practices related to car washing, pet waste disposal, and fertilizer application can have on water quality.	Ongoing Throughout Permit Cycle	Continuous posting on the District website.	Annual verification of website posting.	Students, staff, faculty and all community members	WCS /GLRC
BMP #6 Inform and educate the public on proper application and disposal of pesticides, herbicides, and fertilizers.	Maintain information on District webpage describing proper application and disposal of pesticides, herbicides, and fertilizers.	Ongoing Throughout Permit Cycle	Continuous posting on the District website.	Annual verification of website posting.	Students, staff, faculty and all community members Staff	WCS /GLRC
BMP #7 Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter into the MS4.	Maintain information on District webpage describing illicit discharges.	Ongoing Throughout Permit Cycle	Continuous posting on the District website.	Annual verification of website posting.	Students, staff, faculty and all community members	WCS /GLRC

BMP/Topic	Implementation BMP	Timeframe	Measurable Goal (or WMP goal)	Evaluation Method/Record Keeping	Target Audience	Responsible Party
BMP #8 Continue to maintain pet waste reduction watershed signage at parks or designated dog areas.	Place pet waste reduction watershed signage at designated areas.	Ongoing Throughout Permit Cycle	Place pet waste reduction watershed signage at designated areas, as needed.	Document number of signs placed throughout the District.	Faculty, staff, and facility administrators	WCS /GLRC

2.2.4 Public Education Program Effectiveness

The GLRC PEP Committee will evaluate and determine the effectiveness of the overall public education activities for the Greater Lansing storm water activities. The GLRC conducted large-scale, statistically valid surveys of citizens in previous permit cycles, and survey results were used to modify education and outreach activities. The PEP Committee will explore the following options for assessing PEP effectiveness in the new permit cycle: a duplicate of the previous surveys (conducted either in-house or contracted out); the utilization of an online survey; conducting focus groups; or conducting targeted interviews of individuals in the region. This will be completed by the end of the permit cycle, scheduled for October 2023. The purpose of this evaluation will be to assess changes in public awareness and modify PEP activities to ensure the effectiveness of public education program.

2.3 Illicit Discharge Elimination Program (IDEP)

The following WCS Illicit Discharge Elimination Program is designed to identify, locate, prohibit and effectively eliminate illicit discharges, including discharges of sanitary wastewaters, to the permitted separate stormwater drainage systems.

2.3.1 IDEP Program Objectives

1. Establish authority to investigate, inspect and monitor suspected illicit discharges.
2. Maintain maps of the MS4, points of discharge, and outfalls.
3. Prohibit non-stormwater discharge into the MS4.
4. Provide regular training to staff.
5. Instruct contractors to prevent dumping into the MS4.
6. Conduct routine dry weather screening.
7. Conduct source investigations if the source of an illicit discharge/connection is not identified by field screening.
8. Illicit discharge identification and elimination program performance & effectiveness.

2.3.2 Facility Site Storm Sewer System Maps and Lists

WCS and consultants completed storm sewer system mapping at each of the owned operated properties identified in Section 1.0 of this Stormwater Management Plan. Storm sewer system maps include detailed information of the storm sewer system, including the locations of outfalls, points of discharge, and waters of the State that receive the discharges. The maps include a unique identification number for each storm sewer location identified on the map. Latitude and longitude are also noted for outfall and points of discharge location. Storm sewer system information will be maintained and updated and reported in Progress Reports.

Outfalls are discharge points where stormwater is discharged directly to surface waters of the state. Surface waters of the state include streams, lakes, ponds, county drains, and wetlands. Outfalls can be pipes, ditches, or even sheet flow from the facility. Some facilities will have an outfall where they can manually control the discharge.

Points of Discharge are discharge points where stormwater is discharged to a municipal or private separate storm sewer system. The visual assessment should be conducted as close to the point of discharge as possible before the storm water enters the municipal or private separate storm sewer system. Points of discharge include on-site catch basins and trench drains, in-street catch basins, and conveyances to roadside ditches

Copies of the current facility storm sewer system maps are available at Maintenance Facility, 3809 W. St. Joseph, Lansing, Michigan 48917. Additionally, copies of the storm sewer system maps and a list of the outfalls and points of discharge are provided in Appendix “A”.

2.3.3 Illicit Discharge Identification & Investigation Procedure – Field Observations

WCS will conduct field observations for 100% of all outfalls and discharge locations during dry weather or more expeditiously if WCS becomes aware of a non-stormwater discharge. Outfalls and points of discharge will be inspected by personnel trained to recognize all signs of possible illicit discharges. Dry weather screening will occur at least once every 5 years. WCS’s next 5 year dry weather screening cycle is scheduled for 2022. Preferably, each outfall or discharge point will be inspected and evaluated following a period of at least 48-72 hours of dry weather.

The field observations will focus on visual inspection for the following:

- Outfall/point of discharge number
- Date/name of inspector
- Date of last rainfall
- Presence or absence of flow
- Presence or absence of standing water
- Water clarity and color
- Presence of oil sheen, trash and or other floatable materials
- Presence of bacterial sheen or slimes
- Excessive vegetative growth
- Odor
- Suds
- Presence of oil
- ❖ These Characteristics are documented even if no flow is observed at the time of the inspection.

All field observations are detailed on a “Screening Inspection Log”. A copy of the Screening Inspection Log is provided in Appendix “D”.

During field observations, in instances where the storm sewer outfalls and points of discharge is submerged or is connected to another enclosed sewer, the inspector will observe the nearest upstream storm sewer location or access point. Additionally, if dry weather flow is observed and it is obvious that an illicit discharge is present and the source of the discharge is obvious, WCS will document the observations and the source and follow-up with applicable parties. Once a potential discharge is indicated at an outfall or point of discharge, additional inspection, field screening and source investigation activities are conducted.

2.3.4 Illicit Discharge Identification & Investigation Procedure – Field Screening & Source Investigation

At the time of the outfall or point of discharge inspection, if dry weather flow is observed and the source is not obvious or identified during the regular field observations, then the inspector who identified the discharge shall, within two weeks of the initial discovery, will conduct an upstream source investigation to determine the origin of the flow. The initial investigation includes visual and olfactory observations upstream from the outfall/point of

discharge. If necessary, relevant indicator field screening, video camera inspection and/or dye tracing will be conducted.

If the origin of the flow is not identified during the upstream investigation; within 24 hours of the observed dry weather flow, a grab sample is collected from the discharge for indicator field screening analysis. Indicator monitoring/field screening is the secondary tool utilized for dry weather flow without obvious indicators such as very high turbidity, strong odors or visible discharge. Screening may include some or all of the indicator parameters:

- Temperature
- pH
- Detergents (i.e., surfactants)
- Chlorine
- Ammonia (NH₃-N)
- Turbidity
- Conductivity

Indicator parameters used to assess the dry weather flow shall be determined by the visual and olfactory observations and upstream source investigation.

Additional grab samples will be collected and delivered for external laboratory analysis only if additional test parameters are required for the source investigation. The laboratory analysis parameters for grab samples are determined by the type of contamination suspected at the time of the source investigation. A copy of the AEG Stormwater Sampling and Analysis Protocol Screening is included in Appendix “D”.

Laboratory indicator parameters are based on MDEQ guidance and as specified in the reference sources identified above. The selected laboratory parameters are:

- Fluoride
- Coliform
- E-coli
- Potassium
- Color
- Ammonia

The exact procedure for tracking the illicit discharge will depend on the particular facts of each incident. At the time of the identification of the observed dry weather flow, the flow will be tracked upstream until the source is isolated. Once the source has been isolated down to a specific site location, the work will become source confirmation. If the source is not confirmed, additional fieldwork, building evaluation, or dye testing may be necessary. Additional source investigations will be conducted within 30 days of the original observed dry weather flow.

Once the elimination of an illicit connection or illicit discharge has occurred, an elimination report detailing the corrective actions with attached work orders, photos or dye tracing results will be compiled for documentation purposes. Field inspections will continue until it can be reported that no illicit connection or discharge is present at that outfall/point of discharge. Information regarding specific techniques are provided in the AEG Stormwater Sampling and Analysis Protocol Screening included in Appendix “D”.

2.3.5 Illicit Discharge/Connection Elimination Procedure

Illicit discharges and connections are identified through reporting, routine storm sewer system inspections and dry weather screening inspections. A “How to Spot Illicit Discharges” poster along with a “How to Report/Hotline Numbers” posters are placed in the receiving/custodial areas in each facility to report concerns. WCS goal is to evaluate all potential unauthorized or suspected illicit discharge to the municipal separate storm sewer system (MS4), and perform any necessary notifications and reporting to the applicable agencies (i.e., MDEQ, local drain commission, etc.) within the required time period(s).

WCS will evaluate and conduct the following actions regarding reported or observed illicit discharges/illegal dumping spills into the storm drainage system.

- If, in the opinion of WCS, immediate action to address the suspected discharge is indicated, WCS will ensure that the site is investigated within one week.
- Conduct source investigations, including applicable field screening to trace the origin of the materials within two weeks of the reported/observed illicit discharge.
 - WCS will follow existing spill response procedures outlined in Spill response, Policy & Procedures, if required.
- Once the source has been isolated down to a specific site location, the work will become source confirmation
- If the responsible party is identified, educate the party on the impacts of their actions, explain the stormwater requirements and provide information regarding Best Management Practices.
- Evidence of illicit discharges traced to other MS4 jurisdictions will be provided to the responsible MS4 operator along with any collected data to assist that MS4 operator in completing their investigations to correct the illicit discharge or connection.
- WCS will cooperate with the MS4 operator in determining the source or type of illicit discharge and/or connection and will follow-up to ensure that appropriate action has been completed by the MS4 operator to eliminate the discharge.
- Continue inspection and follow-up activities until the illicit discharge activity has ceased.
- Document all activities utilizing the Illicit Discharge/Illegal Dumping Reporting form.

A copy of the Illicit Discharge/Illegal Dumping Reporting form is located in Appendix “E”.

Once an illicit discharge has been confirmed from a WCS facility, the discharge will be corrected using the most expedient method possible based on the type and configuration of the discharge or connections. Other illicit discharges or releases of polluting materials will be corrected through administrative measures including employee training, placement of signs or markings, policy revisions, or any other steps necessary to eliminate the continued release of polluting materials to the MS4.

Within 60 days of a confirmed illicit connection from a WCS facility, WCS will take steps to fix or eliminate the illicit connection. These steps include a review of corrective methods to be used to repair or eliminate the connection, determine the length of time the repair or elimination will take to complete, the cost of the elimination, the pollution potential and consider how the removal of the illicit connection will be confirmed. Corrective methods include capping, closing, or re-routing illicit connections to the sanitary sewer or other collection systems.

2.3.6 Illicit Discharge Elimination Program Policy

Prevention of pollution from storm water runoff and the protection of the quality of the waters of the State of Michigan are of utmost importance to WCS. WCS does not have regulatory authority to create or enforce ordinances. WCS does not have regulatory authority to create or enforce ordinances. WCS has developed a Board Policy Resolution to direct compliance and identify specific actions to be taken by WCS to ensure compliance with applicable NPDES permit Standards.

WCS has a board policy resolution to direct compliance with these requirements. A copy of the School Board Policy Resolution and the updated School Board Policy Resolution are provided in Appendix “B”.

The WCS Stormwater Manager or designee will be provided full access to all WCS facilities and properties owned and operated by the district as required to inspect, investigate, and monitor suspected or confirmed illicit discharges or connections to the MS4.

Illicit Discharge means any discharge to, or seepage into the separate stormwater drainage system that is not composed entirely of stormwater or uncontaminated groundwater except discharges pursuant to an NPDES permit. Illicit discharges include but are not limited to the following:

- Dumping of motor vehicle fluids
- Improper disposal of household hazardous wastes
- Grass clippings
- Leaf litter
- Pet & other animal wastes
- Unauthorized discharges of sewage
- Industrial wastes
- Restaurant wastes
- Vehicle & equipment wash waters
- Any non-stormwater waste

Document all activities utilizing the Illicit Discharge/Illegal Dumping Reporting form.

Illicit Connection means a physical connection to the MS4 separate stormwater system that primarily conveys non-stormwater discharges other than uncontaminated groundwater into the MS4 separate storm sewer system; or a physical connection not authorized or permitted by the local authority , where a local authority requires authorization or a permit for physical connections.

Waverly Community Schools’ (WCS) policy is to eliminate all illicit connections or discharges from their facilities and restrict the discharge of polluting substances to the separate storm sewer system. The process to achieve these goals will consist of the inspection and screening of all storm sewer systems and elimination of any improper connection from any WCS facility to any waterway or the municipally owned separate storm sewer system (MS4).

Discharge Prohibitions

1. Prohibition of Illicit Discharges. WCS prohibits the discharge of non-stormwater discharges into the storm drain system, including but not limited to pollutants or waters containing any pollutants.
2. The following discharge is not prohibited.
 - a. This policy excludes prohibitions from the discharge or flows from firefighting activities to the WCS MS4. Discharge or flows from firefighting activities will be addressed only if they are identified as significant sources of pollutants to surface waters of the state.
 - b. The following activities are not prohibited under this policy unless they are determined to be significant sources of pollutants to surface waters of the state:
 - Water line flushing and discharges from potable water sources.
 - Landscape irrigation runoff, lawn water runoff, and irrigation waters.
 - Diverted stream flows and flows from riparian habitats and wetlands.
 - Rising groundwater and springs.
 - Uncontaminated groundwater infiltration and seepage.
 - Uncontaminated pumped groundwater, except groundwater cleanups specifically authorized by NPDES permits.
 - Foundation drains, water from crawl space sumps, footing drains, and basement sump pumps.
 - Air conditioning condensation.
 - De-chlorinated swimming pool water from single, two, or three family residences. (Swimming pools operated by WCS shall not be discharges to the separate storm sewer system or a surface water of the state without NPDES permit authorization).

Prohibition of Illicit Connections

1. Improper connections in violation of this regulatory mechanism must be disconnected and redirected.
2. Illicit discharge and connections will be eliminated.
3. The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited by WCS. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

2.3.7 Illicit Discharge Training

A training program is an important component of to an effective IDEP. Training is required for all employees whose job responsibilities involve illicit discharge related activities, or indicate a potential to cause, witness, or report and illicit discharge or connection. Training is discussed in detail in Section 3.0 of this SWMP.

2.3.8 Illicit Discharge Program Effectiveness

WCS is required to track implementation of the illicit discharge elimination program stormwater management items and evaluate its effectiveness. Documentation of these items includes documentations of actions taken to eliminate

illicit discharges. The following are examples of the types of performance measures and effectiveness measures that may be used to evaluate the effectiveness of the IDEP program. The following information will be reviewed annually, and will be used to focus and modify activities to maximize environmental benefits of the plan.

- Verify the distribution of public education posters.
- Number of outfalls/discharge points screened.
- Number of illicit connections found.
- Number of illicit connections eliminated.
- Number and type of discharges that are investigated.
- Actions conducted to follow-up discharges that are identified or reported.
- Number of scheduled clean-outs and routine maintenance work conducted.

2.3.9 Illicit Discharge Elimination Program (IDEP) BMP Table

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #1 Review Sewer Connections	Review engineering drawings	Completed 2013 and update as needed Throughout Permit Cycle	Assure that all connections are connected to the correct sewer. If drawings are not adequate, field investigations will be conducted.	100% of all plans reviewed / all areas field checked where plans are not available	WCS
BMP #2 Facility Storm Sewer System Maps	Provide an up to date storm sewer system map. The maps shall identify the storm sewer system, location of outfalls and points of discharge, and names and locations of the surface waters of the state receive the discharge.	Maps Completed in 2013 Updates Ongoing as Needed Throughout Permit Cycle	100% of facilities mapped, and 100% of storm sewer system updates mapped.	Maintain facility site maps at Facility Operations Building.	WCS
				Update facility map with sewer system updates. Maintain maps for progress report submittal.	WCS
BMP #3 Dry Weather Screening	Dry Weather Screening conducted every 5 years. Dry weather screening will be conducted by personnel trained to recognize all signs of possible illicit discharges.	2017 DWS Complete Additional DWS Rounds in 2022	100% of outfalls and point of discharges inspected and evaluated following a period of 48-72 hours of dry weather. Outfalls/points of discharges re-inspected if necessary.	Maintain dry weather screening inspection logs/reports.	WCS
BMP #4 Illicit Discharge Reporting	Eliminate illicit discharges and connections through reporting, routine storm sewer system inspections and dry weather screening inspections.	Ongoing Throughout Permit Cycle	Place "How to spot illicit discharge/ How to Report-Hotline Numbers" posters placed in Receiving Rooms at each WCS facility. Goal is to have one poster at each facility.	Annually verify number of posters in place throughout the district.	WCS
			Advertise reporting hotline on district webpage.	Track number of calls and document calls onto Illicit Discharge/Illegal Dumping Reporting form. (Appendix "E").	

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #5 Unauthorized Discharge/ Illicit Discharge Complaint Response	The District will immediately evaluate any potential unauthorized or suspected illicit discharge to the municipal separate storm sewer system (MS4) and perform any necessary notifications and reporting to the applicable agencies (i.e., MDEQ, local drain commission, etc.) within the required time period(s). This procedure is outlined in Section <u>Polluting Materials Emergency and Spill Response Policy & Procedures</u> .	If, in the opinion of the District, immediate action to address the suspected discharge is indicated, the District will follow up within 7 days. Within 30 days of reported suspected discharge.	100% of unauthorized or suspected illicit discharges evaluated (field observation, field screening, and source investigation) and eliminated.	Documentation of relevant field observations, field screening or source investigations.	WCS
BMP #6 Illicit Connections	Reroute, repair, or disconnect any illicit connections.	Within 60 days of identified illicit connection	Take steps to eliminate 100% of identified illicit connections.	Work order, receipt or report detailing the illicit connection correction activities.	WCS
BMP #7 Illicit Discharge Elimination Training	Train staff on the identification and reporting of illicit discharges or improper connections and the cleanup/notification procedures for spills of polluting materials.	Once per permit cycle or during the 1 st year of employment Throughout Permit Cycle	Goal of providing illicit discharge elimination training to all maintenance, transportation, custodial and skilled trade staff who work for WCS. [All Stormwater Training is outlined in Section 3.0 Training]	Copy of sign in sheets and Agenda (if available).	WCS
BMP #8 Stream Bank Inspections	Conduct stream bank inspections.	Ongoing Throughout Permit Cycle	Inspect banks along WCS properties to identify erosion or potential erosion problems and check for water clarity conditions.	100% of bank inspections completed. Copy of reports.	WCS
BMP #9 Stenciling	Storm drain marking.	Completed 2013 As Needed Throughout Permit Cycle	WCS has stenciled “No Dumping – Drains to River” on all storm drains located on pervious surfaces. This informs and educates the public not to dump into these structures.	Monitor existing stencil for wear and include storm drain stenciling in new developments.	WCS

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #10 IDEP program Performance & Effectiveness	Review performance measures to evaluate the effectiveness of the IDEP program. Items include; posting of IDEP public education posters, number of outfalls/discharge points screened, number of illicit connections found, number of illicit connections eliminated, number and type of violations investigated, and number of scheduled clean-outs and routine maintenance work conducted.	Annually Throughout Permit Cycle.	Annual review of SWMP IDEP program performed.	Maintain copy of SWMP annual review and evaluation information for progress reporting.	WCS

2.3.10 Polluting Materials Emergency and Spill Response Policy and Procedures

Purpose

This policy and associated procedures have been developed to define appropriate and safe response procedures for spill or accidental releases of hazardous materials or substances at all Waverly Community School District facilities.

Policy

WCS will comply with all Federal, State, and local regulatory requirements for the management and reporting of all hazardous materials and/or waste releases. The Director of Maintenance and Operations will maintain responsibility for monitoring any changes in regulatory requirements regarding hazardous materials and waste spills or accidental releases. This policy will be revised as necessary based upon any changes in the regulatory requirements or internal experiences.

All hazardous materials spills or releases will be thoroughly investigated by the Director of Maintenance and Operations. The Director of Maintenance and Operations is responsible for notifying the MDEQ and/or other local, state, or federal regulatory agencies in the event that a release to the MS4 or surface waters occurs at levels above the threshold reporting quantities referenced in the PA 451 Part 5 rules.

If it is determined that the release poses a threat to the safety or the environment outside the facility, the Director of Maintenance and Operations will report the release to the 24-hour **Michigan Pollution Emergency Alerting System (PEAS) at 1-800-292-4706** immediately or within 24 hours of knowledge of the release. Any release of oil (includes gasoline, diesel fuel, used oil and mineral spirits) to navigable waters or adjoin shorelines will be reported to the 24-hour **National Response Center (NRC) at 1-800-424-8802** immediately or within 24 hours of knowledge of the release. In the event the spill takes place after working hours, site personnel will contact the assigned coordinator to notify the Director of Plant Operations & Services that an incident has occurred.

The Director of Maintenance and Operations will be responsible for developing, maintaining, and implementing procedures for managing significant or hazardous materials spill response and associated employee education and training for compliance with the policy and procedures. The Director of Maintenance and Operations is responsible for notifying the MDEQ and/or other local, state, or federal regulatory agencies in the event that a release to the MS4 or surface waters occurs at levels above the threshold reporting quantities referenced in the PA 451 Part 5 rules.

Emergency Spill Response Procedures

Each facility having the potential for the release of a hazardous material or substance shall have trained and knowledgeable staff members to respond and/or implement spill response procedures for that facility. Spill containment materials such as absorbent pigs, pads, booms, diking materials, storm drain covers, etc. are to be stored and maintained at all facilities for use by trained employees in the event of a spill or accidental release.

The following general guidelines are to be implemented as applicable in managing spills and accidental releases:

- 1) **For spills in which there is no immediate dangers to employees, students, or the general public and does not represent a danger of contamination to a sanitary sewer, storm sewer, of the ground:**
 - A. Contain spill to the smallest area possible.
 - B. Review the Material Safety Data Sheet for determination of proper spill handling, and appropriate personal protective equipment selection.

- C. Place compatible absorbent material or spill pads on the area.
- D. Clean up and containerize the absorbent materials.
- E. Contact the Maintenance and Operations Department for waste disposal instructions and additional cleaning requirements.

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

- A. Notify the Maintenance and Operations Department.
- B. If there is the threat of fire, explosion, or if any person(s) exhibits severe symptoms of exposure, contact 911 to initiate local emergency services.
- C. Alert anyone in the area and begin evacuation procedures.
- D. Use absorbent socks, booms, or other absorbents to dike the spill area if safe to do so, and secure the area from unauthorized personnel. Refer to the Material Safety Data Sheet to determine the proper personal protective equipment.
- E. Remove all sources of ignition for releases of flammable or combustible materials.
- F. The Maintenance and Operations Department will initiate all notification procedures and contact the contracted emergency response contractor to mitigate and remediate the release.
- G. Complete the "Hazardous Material or Waste Spill Exposure Form" for all exposed persons.
- H. The Director of Plant Operations & Services will assess the spill and notify all agencies as required.

3) Spills of Elemental Mercury

- A. Contact the Maintenance and Operations Department immediately.
- B. Remove all personnel from the immediate spill area without traveling through the spill area, and if possible, close the door and lower the thermostat in the affected room.
- C. Keep all potential contaminated persons in a close area to the spill but outside of the affected area to minimize additional exposure to mercury vapors.
- D. Remove and containerize any potentially contaminated clothing or other articles from affected persons.
- E. The Director of Plant Operations & Services will contact the appropriate emergency response contractor to clean-up the spill and properly decontaminate and/or dispose of all contaminated articles.

Refer to sections **2.3.4 Illicit Discharge Identification & Investigation Procedure – Field Screening & Source Investigation** and **2.3.5 Illicit Discharge/Connection Elimination Procedure** for implementation timeframes.

This guidance has been developed in anticipation of potential releases of hazardous materials and substances. The procedures outlined in this guidance should only be implemented by those persons who have received sufficient training and are competent in the handling of the released material.

As appropriate, illicit discharges or releases of polluting materials will be corrected through administrative measures including employee training, placement of signs or markings, policy revisions, or any other steps necessary to eliminate the continued release of polluting materials to the MS4. WCS will conduct follow-up inspections and sampling as needed to ensure that appropriate action has been completed.

2.4 Construction Site Stormwater Runoff Control Program

WCS goal is to establish procedures for construction stormwater runoff control to meet minimum measure requirements to maximum extent practicable.

Construction refers to actions that result in a disturbance of the land, including clearing, grading, excavating, and other similar activities.

Construction-related activities are activities that support the construction project such as stockpiles, borrow areas, concrete truck washouts, fueling areas, material storage areas and equipment storage areas.

2.4.1 Construction Site Stormwater Management Program Objectives

- A. Process for notify the Part 91 Agency appropriate staff when soil or sediment is discharged to the MS4 from a construction activity.
 - The procedure shall allow for the receipt and consideration of complaints or other information submitted by the public or identified internally as it relates to construction stormwater runoff control.
- B. Procedure for when to notify the MDEQ when soil, sediment, or other pollutants are discharged to the MS4.
 - Other pollutants include pesticides, petroleum derivatives, construction chemicals, and solid wastes that may become mobilized when land surfaces are disturbed.
- C. Procedure for ensuring that construction activity one acre or greater in total land disturbance obtains a Part 91 Permit.

2.4.2 Construction Notification Procedure

The MDEQ certified construction stormwater operator inspector conducting site inspections will normally detect any soil or sediment entering the MS4.

In the event an inspector identified a discharge during an inspection:

1. The inspector shall document all details of the soil erosion and sedimentation control deficiency and report to the Supervisor, Maintenance & Operations/WCS Stormwater Manager.
2. The Supervisor, Maintenance & Operations/WCS Stormwater (or designee) is responsible for assessing any suspected or confirmed discharge and notifying the appropriate agency.
3. WCS will notify the local Part 91 agency or MDEQ when runoff from the construction site discharges significant pollutants to the MS4 or surface waters of the state within 24 hours of discovery or as otherwise required by the issuing agency.

In the event of a public complaint:

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

The tracking will include:

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

WCS will notify the Part 91 Agency, when soil, sediment, and other pollutants such as pesticides, petroleum derivatives, construction chemicals, and solid wastes are discharged into MS4.

WCS ensures that construction activity one acre or greater in total earth disturbance with the potential to discharge to the MS4 does obtain a Part 91 Permit and State of Michigan Permit by Rule.

2.4.3 Part 91 Permit

WCS will ensure that any construction activity that result in a land disturbance meeting the following criteria:

- Greater than or equal to one (1) acre, or
- Disturb less than one (1) acre that is part of a common plan of development or sale.

Will obtain a Part 91 Permit through the site plan review process with the appropriate county or municipal permitting agency.

2.4.4 Permit by Rule Compliance

WCS shall comply with the State of Michigan Permit by Rule (Rule 323.2190) for stormwater discharge from construction activity. Sites disturbing one (1) to five (5) acres with a point source discharge to the waters of the state receive automatic storm water coverage upon securing a SESC permit from the appropriate Part 91 recognized County Enforcing Agency, Municipal Enforcing Agency, or Authorized Public Agency (APA) under the authority of Part 91.

1. Construction sites with at least one (1) acre but less than five (5) acres of soil disturbance with a surface water discharge, must obtain a county or municipal SESC permit, and are required to follow the provisions of the Permit by Rule, but do not need to notify the MDEQ of the construction activity.
2. Construction sites disturbing over five (5) acres with a point source discharge to the waters of the state must obtain a county or municipal SESC permit, and submit a Notice of Coverage (NOC) and other pertinent documents and the appropriate fee to the MDEQ.

Requirements of Permit by Rule include, but are not limited to:

- Weekly site inspections conducted by a Certified Construction Stormwater Operator.
- Inspection within 24 hours of a precipitation event that results in a discharge from the site by a Certified Construction Stormwater Operator.

2.4.5 Construction Site Stormwater Management BMP Table

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #1 Notification of Deposit during Inspection	WCS will notify the local part 91 agencies or MDEQ when runoff from the construction site discharges significant pollutants to the MS4 or surface waters of the state within 24 hours of discovery or as otherwise required by the issuing agency. The WCS Stormwater Manager (or designee) is responsible for assessing any suspected or confirmed discharge and notifying the appropriate agency.	As Necessary Throughout Permit Cycle	100% discharges identified and appropriate agencies notified. Control of potential system failure.	Documentation of Construction Stormwater Operator site inspection.	WCS
	Track complaints submitted by the public or noted by staff during regular course of business of soil, sediment, or other pollutants such as pesticides, petroleum derivatives, construction chemicals, and solid wastes are being discharged into the MS4.			Documentation of public complaint (Name of person providing the complaint, location [address or nearest cross street] description of follow up [e.g., date referred to the Part 91 enforcing agency]).	WCS
BMP #2 Part 91 Permit	WCS will ensure that any construction activity that result in a land disturbance greater than or equal to one (1) acre or disturb less than one (1) acre that is part of a common plan of development or sale will obtain a Part 91 Permit through the site plan review process.	As Necessary Throughout Permit Cycle	100% of permits obtained.	Copy of permit and associated soil erosion and sedimentation control plans.	WCS

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #3 Permit by Rule	Construction sites between (1) acre but and five (5) acres of soil disturbance follow the provisions of the Permit by Rule, but do not need to notify the MDEQ of the construction activity.	As Necessary Throughout Permit Cycle	Goal of 100% of weekly and precipitation event inspection completed by certified Construction Stormwater Operator.	Copy of inspections.	WCS
	Construction sites disturbing over five (5) acres with a point source discharge to the waters of the state must follow provisions of the Permit by Rule and submit a Notice of Coverage (NOC) and other pertinent documents and the appropriate fee to the MDEQ.		Goal of 100% of weekly and precipitation event inspection completed by certified Construction Stormwater Operator.	Copy of inspections.	WCS
			100% NOCs obtained.	Copy of NOC	

2.5 Post Construction Stormwater Controls for New Developments & Redevelopments

The following WCS Illicit Discharge Elimination Program is designed to identify, locate, prohibit and effectively eliminate illicit discharges, including discharges of sanitary wastewaters, to the permitted separate stormwater drainage systems.

2.5.1 Post Construction Stormwater Management Program Objectives

The post-construction stormwater run-off controls are necessary to maintain or restore stable hydrology in receiving waters by limiting surface runoff rates and volumes and reducing pollutant loadings from sites that undergo development or significant redevelopment.

The objects of this program and associated procedures are to:

- a. Develop and implement regulatory mechanisms to address post-construction stormwater runoff for new development and redevelopment projects, including preventing or minimizing water quality impacts.
- b. Develop and implement regulatory mechanisms for projects that disturb one or more acre, including projects less than an acre that are part of a larger common plan of development or sale and discharge into the applicants MS4.
- c. Ensure post construction controls to minimize water quality impacts by following water quality treatment standards.
- d. Require that BMP's be designed on a site-specific basis to reduce post-development total suspended solids loading.
- e. Procedure for the use of Infiltration BMP's to meet water quality treatment and channel protection standards of new development or redevelopment projects.
- f. Address "hot spots".
- g. Submit site development plans for review and approval.
- h. Require adequate long-term O&M of BMPs by ordinance or other regulatory mean

Waverly Community Schools (WCS) has developed and passed a board policy resolution on February 23, 2013, to direct compliance with these requirements. In addition to the board policy resolution, the following sections identify specific actions to be taken by WCS to ensure compliance with the applicable standards. A copy of the approved WCS School Board Policy Resolution and updated Board Policy Resolution are provided in Appendix "B".

2.5.2 Water Quality Standard

WCS goal is to include water quality treatment volume standards for each new construction or redevelopment of projects where the area of disturbance exceeds one (1) acre. One or more of the following treatment standards should be included as part:

- 1) Treat the first one inch of runoff from the area of new construction or redevelopment.
- 2) Treat the runoff generated ninety percent (90%) of all runoff-producing storms for the project site.

The source of the rainfall data for the water quality treatment standard of requiring the treatment of the runoff generated from the ninety percent (90%) of all runoff-producing storms is:

- The MDEQ memo dated March 24, 2006, which is available via the internet at www.michigan.gov/documents/deq/lwm-hsu-nps-ninety-percent_198401_7.pdf.

Treatment methods shall be designed on a site-specific basis to achieve the following:

1. A minimum of eighty percent (80%) removal of total suspended solids (TSS), as compared with uncontrolled runoff, or
2. Discharge concentrations of TSS not to exceed 80 milligrams per liter (80mg/L).

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

Treatment methods shall be designed on a site specific basis to reduce the discharge of sedimentation or TSS from the site. Such methods may include:

1. Stand pipe filters in storm water detention basins
2. Sediment filter tanks
3. Catch basin sumps
4. Aqua-Swirls®
5. Treatment trains
6. Rain Gardens
7. Pervious pavement systems

2.5.3 Channel Protection Performance Standard

WCS understands that channel protection criteria is necessary to maintain post-development stormwater runoff volumes and peak flow rates at or below existing levels for all storms up to the 2-year, 24-hour event. “Existing Levels” means the runoff volume and peak flow rate for the last land use prior to the planned new development or redevelopment.

Where more restrictive channel protection criteria already exists, or is needed to meet the goals of reducing runoff volume and peak flows to less than existing levels on lands being developed or redeveloped, WCS will consider use of the more restrictive criteria rather than the standard permit requirements.

A post-construction stormwater runoff program compliance assistance document is available via the internet at www.michigan.gov/documents/deq/wrd-storm-MS4-ComplianceAssistance_470350_7.pdf

2.5.4 Site Specific Requirements

Because each site has its' own special circumstances and conditions the following BMPs will be considered as appropriate according to site conditions.

- Reduce runoff from the site to greatest extent possible (provide holding basins, divert water through grassed swales).
- Prevent spills and discharges.
- Control waste such as building materials, concrete washout, chemicals, litter, and sanitary waste.
- Phasing will be considered to limit amount of exposed soils.
- Interim soils stabilization methods are to be considered (temporary seeding, mulching etc.).
- Buffer preservation (avoid exposing soils to property limits).

- Inspection staff will be trained in the proper maintenance and operation of Soil Erosion and Silt Prevention measures.

Construction plans will be reviewed for sites with known soil and/or groundwater contamination, including potential “hot spots” and evaluate the use of infiltration BMPs to meet water quality treatment and channel protection criteria to ensure that infiltration BMPs do not exacerbate existing conditions. Hot spots include areas with the potential for significant pollutant loading such as vehicle service and maintenance facilities, vehicle equipment cleaning facilities, fleet storage areas for buses, and outdoor liquid container storage.

Additional water quality standards or pretreatment measures may be required in addition to those included in the water quality criteria in order to remove potential pollutant loadings from entering either groundwater or surface water systems.

Pretreatment measures include:

Stormwater Hot Spots	Minimum Pre-Treatment Options
Vehicle service and maintenance facilities	<ol style="list-style-type: none"> 1. Oil/Water Separators/Hydrodynamic Devices 2. Use of Drip Pans and/or Dry Sweep Material under Vehicles/Equipment 3. Use of Absorbent Devices to Reduce Liquid Releases 4. Spill Prevention Response Program
Fleet storage areas for buses	BMPs that are part of a Stormwater Pollution Prevention Plan (SWPPP)
Vehicle Fueling Stations	<ol style="list-style-type: none"> 1. Oil/Water Separators/Hydrodynamic Devices 2. Water Quality Inserts for Inlets 3. Spill Prevention Response Program
Vehicle equipment cleaning facilities	BMPs that are part of a Stormwater Pollution Prevention Plan (SWPPP)
Outdoor liquid container storage	Spill Prevention Response Program

2.5.5 Site Plan Review

This policy is to establish requirement to submit a site plan for review as required by the MDEQ NPDES Phase II Stormwater Discharge Permit. WCS will prepare and submit a written application, including a site plan for review and approval of post-construction stormwater runoff BMPs, for all new construction or redevelopment projects where the area of disturbance exceeds one (1) acre. The application will be completed in a form and manner as prescribed by the local municipality or governing unit in which the property is located. The site plan will be reviewed by the appropriate local municipal, county, state or other governmental agency. The review of the stormwater site plan will provide local municipal, county, state or other governmental agency with the ability to ensure that water quality objectives, erosion and sediment control requirements, and BMP maintenance are adequately considered.

The goal of the site plan review is to:

1. Minimize clearing and grading.
2. Protect waterways.
3. Limit soil exposure.
4. Protect steep slopes and cuts.

2.5.6 Long Term Operation & Maintenance of Stormwater Controls

Waverly Community Schools will identify all stormwater controls and mechanisms for all new construction or redevelopment projects where the area of disturbance exceeds one (1) or more acres. WCS will develop “BMP Operation and Maintenance” guidance manuals for each property, including:

- Develop a map of each facility identifying the location and type of structural controls, if any exist.
- Develop a guidance manual that will provide a listing of structural controls including a site diagram showing the location of each control, instructions for inspection and operation, and the inspection and/or maintenance schedules for each control mechanism.
- Stormwater runoff facilities, after construction and approval, shall be maintained in good condition, in accordance with the approved storm water plan.
- Update and revise the stormwater structural controls on facility site diagrams as identified during scheduled inspections or within 30 days following the completion a new facility or reconstruction/redevelopment site project.

The Supervisor, Maintenance & Operations will ensure that local work instructions are developed based on BMPs. WCS trained staff or certified contractors will conduct routine inspection of all identified structural controls and complete maintenance, repair, or replacement as necessary.

2.5.7 Post Construction Stormwater Management - BMP Table

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #1 Regulatory Mechanism	Develop and implement regulatory mechanisms to address post-construction stormwater runoff for new development and redevelopment projects, including preventing or minimizing water quality impact	Board Policy Resolution passed February, 2013	Board Policy Resolution passed.	Copy of currant 2013 Board Resolution Policy.	WCS
	Develop and implement regulatory mechanisms for projects that disturb one or more acre, including projects less than an acre that are part of a larger common plan of development or sale and discharge into the applicants MS4.				
BMP #2 Post Construction Standards	Ensure post-construction channel protection standards and water quality treatment standards are met.	As Necessary Throughout Permit Cycle	All applicable site plan are reviewed by the appropriate local municipal, county, state or other governmental agency.	Copy of site plan.	WCS
BMP #3 Site Specific	The District will review construction plans for sites with known soil and/or groundwater contamination, including potential “hot spots” and evaluate the use of infiltration BMPs to meet water quality treatment and channel protection criteria.	As Necessary Throughout Permit Cycle	Reduce or eliminate discharge of pollutants during construction on contaminated sites.	Documentation of additional stormwater controls.	WCS
BMP #4 Site Plan Review	Prepare and submit a written application, including site plan for construction of storm water management systems for all new construction or redevelopment projects where the area of disturbance meets or exceeds one (1) acre.	As Necessary Throughout Permit Cycle	All applicable site plan are reviewed by the appropriate local municipal, county, state or other governmental agency.	Copy of reviewed plans.	WCS

2.6 Pollution Prevention/Good Housekeeping Program

Develop, implement, and ensure compliance through a program of operation & maintenance of BMPs, with the ultimate goal of preventing or reducing pollutant runoff to the maximum extent practicable from operation that discharge stormwater to surface waters of the state.

2.6.1 Pollution Prevention & Good Housekeeping Program Objectives

- a. Maintain an up-to-date inventory of owned facilities and stormwater structural controls.
- b. Procedure for updating and revising inventory of stormwater structural controls.
- c. Procedure for assessing each facility for the potential to discharge pollutants.
- d. Develop an SOP (SWPPP) for all facilities with a high potential for pollutant runoff.
- e. Procedure identifying BMPs currently implemented or to be implemented to prevent or reduce pollutant runoff at each facility with medium and lower potential to discharge.
- f. Procedure for prioritizing of catch basins/manholes for maintenance and cleaning.
- g. Schedule for routine catch basin/manhole inspection, maintenance and cleaning.
- h. Provide the geographic location of stormwater structures.
- i. Procedure for dewatering, storage and disposal of materials extracted from storm sewer cleaning.
- j. Procedure for inspecting and maintaining storm water controls.
- k. Procedure for new structural controls to be designed and implemented in accordance with post-construction stormwater runoff control performance standards.
- l. Best management practices for operation and maintenance activities.
- m. Procedure for street sweeping.
- n. Procedure for pesticide application.
- o. Training.
- p. Contractor requirements and oversight.

It is the ultimate goal of WCS to prevent and reduce pollutant/contaminant runoff from WCS facilities to the maximum extent practicable. All BMPs are implemented at all low, medium and high priority facilities.

2.6.2 Structural Control Inventory & Schedule Table

No prioritization will be needed, as all structures are to be inspected and maintained equally. All structural controls will have routine inspection, maintenance schedules, and long-term procedures which adequately control, to the maximum extent practicable, pollution removal and control. Structural control effectiveness will be determined based on the results of these inspections and repaired, upgraded, or replaced as indicated.

Facility Name	Priority Level of Potential Discharge* (High, Med, Low)	Type of Structural Control	No. of Controls	Inspection/Maintenance Schedule
Administration Building	Low	Catch Basin	3	Inspect annually/ clean once per permit cycle or as needed
Colt Elementary School	Low	Catch Basin	4	Inspect annually/ clean once per permit cycle or as needed
		Manhole	2	Inspect annually/ clean once per permit cycle or as needed
		Open Pipe Outlet	1	Inspect annually/ clean as needed
		Flow Splitter	1	Inspect annually/ clean as needed
		Detention Basin	1	Inspect annually/ clean as needed
East Intermediate School	Low	Catch Basin	12	Inspect annually/ clean once per permit cycle or as needed
		Manhole	15	Inspect annually/ clean once per permit cycle or as needed
Elmwood Elementary School	Low	Catch Basin	5	Inspect annually/ clean once per permit cycle or as needed
		Stormwater Conveyance Channel	2	Inspect annually/ clean as needed

Facility Name	Priority Level of Potential Discharge* (High, Med, Low)	Type of Structural Control	No. of Controls	Inspection/Maintenance Schedule
Transportation & Maintenance	High	Oil Water Separator	1	Inspect annually/clean yearly
		Catch Basin	7	Inspect annually/ clean once per permit cycle or as needed
		Secondary Containment	Multiple	Inspected bi-annually during SWPPP inspections. Maintained as needed
		Above Ground Storage Tanks	2	Maintained under appropriate regulations.
Waverly High School Campus (Waverly High School, Waverly Middle School, Winans Elementary School)	Medium	Catch Basin	60	Inspect annually/ clean once per permit cycle or as needed
		Manhole	38	Inspect annually/ clean once per permit cycle or as needed
		Infiltration Basin	12	Inspect annually/ clean once per permit cycle or as needed
		Underground Detention System	2	Inspect annually/ clean as needed
		Stormwater Conveyance Channel	1	Inspect annually/maintain as needed
		Trench Drain	2	Inspect annually/ clean once per permit cycle or as needed
		Flow Splitter	2	Inspect annually/ clean once per permit cycle or as needed
		Landscape Drain	10	Inspect annually/ clean as needed

Facility Name	Priority Level of Potential Discharge* (High, Med, Low)	Type of Structural Control	No. of Controls	Inspection/Maintenance Schedule
Windemere View Elementary School	Low	Catch Basin	3	Inspect annually/ clean once per permit cycle or as needed
		Manhole	3	Inspect annually/ clean once per permit cycle or as needed
		Infiltration Basin	2	Inspect annually/ clean once per permit cycle or as needed
		Riprap	1	Inspect annually/ maintain as needed

2.6.3 Facility Assessment & Prioritization

WCS has identified all applicant owned facilities with a discharge of stormwater to surface waters of the state, and during mapping of each facility, inventoried the number of stormwater structural controls (i.e. catch basins, detention basins, etc.) at each site. Each location was assessed to determine high, medium and low potential to discharge pollutants to surface waters of the state.

WCS considered the following when assessing each facility:

- Absence of any factors,
- Presence of urban pollutants stored at the site (i.e. sediment, nutrients, metals, hydrocarbons, pesticides, fertilizers, herbicides, chlorides, trash, bacteria, or other site-specific pollutants,
- Identification of improperly stored materials,
- Potential for polluting activities to be conducted outside (i.e. vehicle washing),
- Proximity to water bodies,
- Poor housekeeping practices,
- Discharge of pollutants of concern to impaired waters.

For facilities that have a high potential to discharge pollutants to surface waters of the state, a Stormwater Pollution Prevention Plan (SWPPP) will continue to be implemented.

BMPs currently implemented by WCS at facilities with medium and lower potential for the discharge of pollutants to surface waters of the state include:

1. Good housekeeping practices,
2. Employee training,

3. Routine visual inspections,
4. Spill prevention and response.

This inventory will be updated as facilities and structural stormwater controls are added, removed, or no longer owned or operated by the applicant following routine inspections or following new construction or redevelopment projects. Priority level assessments will be revised within 30 days following the completion a new facility or reconstruction/redevelopment.

2.6.4 Storm Sewer Structure Controls Inspection & Maintenance Policy & Procedure

1. Develop a schedule for inspecting and maintaining catch basins and stormwater controls at each facility, for the reduction of pollutant runoff. A schedule is included in Section 2.6.2 Structural Control Inventory & Schedule Table.
2. Visually inspect all stormwater controls identified on facility maps. Inspection includes; structural integrity of the structure, sediment build-up, flow, overall functionality and presence of erosion.
3. Note inspection information on the inspection form. A copy of the inspection form “Structural BMP Table” is located in Appendix “D”.
4. When inspecting stormwater controls, review the site for BMPs currently implemented to prevent or reduce pollutant runoff at each facility. BMPs include:
 - Review of “No Dumping” stencils at storm drains.
 - Review of catch basins/manholes cleaned.
 - Dumpster good housekeeping practices.
 - Garden, green space and signage inventories.
 - “GLRC” poster placement at facilities.
5. Document BMPs identified during inspection.
6. Following the inspection, the stormwater controls should be prioritized for cleaning and maintenance. Prioritize locations based on the following:
 - Drainage structures that are designated as consistently generating the highest volumes of trash and/or debris.
 - Areas with high amounts of build-up sediment. A build-up of accumulated solid material that is greater than or equal to the one-third guideline established by the EPA. Areas of significant erosion.
 - Areas of significant cracking or sinkholes.
7. Once the inspection is complete, the stormwater manager or designated person will review the report and determine if a work order or other item is needed to needed to work with relevant departments or contractors to fix any problems.
8. If an illicit discharge is suspected, follow the procedure outlined in Section 2.3 Illicit Discharge Elimination Program.
9. Retain inspection forms for each stormwater structural control inspected.
10. Retain documentation regarding the scheduling or completion of the repair/maintenance if completed.
11. Debris and maintenance waste removed as part of the maintenance and/or repairs shall be disposed of in accordance with Structural BMP Operation & Maintenance Waste Disposal procedures.

Furthermore, staff members conducting maintenance and grounds activities are provided IDEP and pollution prevention/good housekeeping training. All structural controls will have routine inspection, maintenance schedules,

and long-term procedures which adequately control, to the maximum extent practicable, pollution removal and control. Structural control effectiveness will be determined based on the results of these inspections and repaired, upgraded, or replaced as indicated. This procedure will be reviewed on an annual basis and updated as needed or 30 days following the implementation of a new stormwater structural control.

2.6.5 Structural BMP Operation & Maintenance Waste Disposal Procedures

Waste materials generated from operation, maintenance, and cleaning activities associated with storm sewer systems has typically been discharged back into the storm sewer system. This type of discharge is unauthorized per Part 31, Water Resources Protection (Part 31) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) and is therefore illegal. The combined solid and liquid waste stream (solid/liquid waste) from cleaning storm sewer systems is legally defined as “Liquid Industrial By-products” pursuant to Part 121, Liquid Industrial By-products (Part 121) of NREPA.

WCS will ensure that all waste materials generated during operation and maintenance of structural stormwater controls are properly characterized, transported, and disposed as required under State of Michigan PA 451 Part 111 (hazardous wastes), Part 121 (liquid industrial by-products), and Part 115 (solid wastes). At a minimum, the following procedures will be implemented for wastes generated from cleaning or maintaining storm sewer structural controls.

Structural BMP Operation & Maintenance Waste Characterization

Prior to conducting cleaning or maintenance to storm sewer structural controls, a certified stormwater operator will complete a waste generation determination. This determination will include a visual inspection of the structure and identification of any waste materials to be generated during the cleaning or maintenance process. The certified operator will document a description of materials currently in the structure and other observations used to determine if potential contaminants are present. Visual observations and physical characteristics to be examined and documented as part of the waste characterization protocols include identification or the presence of:

- Oil or petroleum sheens
- Sedimentation or solids
- Odors
- Color
- Staining
- Vegetation conditions
- Floatables
- Other damage to the structure or observations identifying potential contaminants

Visual observations will be recorded and an assessment completed determining if additional evaluation or testing will be required prior to removal of the wastes. Contaminated materials will be characterized using physical & chemical analysis as required to determine if the resulting wastes are hazardous wastes regulated under part 111 of PA 451 (NREPA). Non-hazardous contaminated materials will be removed and managed as “Liquid Industrial By-products” as required under part 121 of PA 451 (NREPA).

Waste Disposal Methods for Non-Contaminated Materials

Non-contaminated waste materials generated during cleaning or maintenance of storm sewer structures will be properly disposed using one of the following methods:

1. Have the waste transported to drying beds to separate the solid/liquid waste. This is usually performed at a publicly owned treatment plant or at a privately owned permitted facility where the liquid portion of the waste stream is separated from the solids and treated.
2. Request permission from the local wastewater treatment plant operator to discharge the combined solid/liquid waste into the sanitary system. Most treatment plants will require pre-treatment prior to the discharge. All applicable local ordinance provisions must be followed.
3. When conducting catch basin maintenance activities where the above options are not available, the following methods can be used as long as there are no discharges to surface waters during dry weather conditions:
 - Conduct visual inspection to ensure the water in the sump has not been contaminated. If necessary, collect a grab sample of the water and look for signs of contamination such as visible sheen, discoloration, obvious odor, etc. If there is any doubt of the quality of the water, it should be collected into a vacuum truck and treated as Liquid Industrial By-Products under Part 121 or Part 115 of PA 451 (NREPA).
 - Using a sump pump, or any other pumping mechanism, remove the majority of water in the sump of the basin without disturbing the solid material below. Do not use pumps connected to the vacuum truck's holding tank.
 - The clear water may then be directly discharged to one of the following:
 - Sanitary system (with prior approval from local sewer authority).
 - Curb and gutter.
 - Back into the storm sewer system as long as it is contained within the system during dry weather condition to ensure no discharge into surface water.
 - Applied to the ground adjacent to the catch basin (evenly distributed at a maximum rate of 250 gallons/acre/year).
 - The remaining liquid/solid in the sump should be collected with a vacuum truck and disposed of off-site in accordance with MI P.A. 451 Parts 115 or 121.

WCS does not currently own or operate storm sewer cleaning or transportation equipment. If WCS contracts with a private contractor to transport liquids generated from cleaning of catch basins or other structures, that contractor must be registered and permitted as a Uniform Liquid Industrial By-Product Hauler under the provisions of HMTA.

Waste Disposal Methods for Contaminated Materials

Waste materials generated during operation and maintenance of storm sewer systems found or suspected to be contaminated with pollutants or hazardous substances will be characterized, packaged, marked, labeled, stored, transported, and disposed as a liquid industrial by-product under Part 121 or Part 115 of PA 451 (NREPA).

2.6.6 Pollution Prevention/Good Housekeeping – Municipal Operations & Maintenance Activities

WCS recognizes the importance of reducing pollutant runoff from maintenance activities. The following procedure will include an assessment of the potential activities for the potential to discharge pollutants. The assessment shall identify the pollutants that could be discharged from the applicable operation and maintenance activity and the BMPs implemented or to be implemented to prevent or reduce pollutant runoff.

PROCEDURE

Applicable operations and maintenance activities include parking lot and sidewalk maintenance, cold weather operations, vehicle washing, maintenance of vehicles, land disturbance and landscape. Bridge maintenance, right-of-way maintenance and unpaved road maintenance do not apply to WCS.

Roadways/Parking Lots

Maintenance: Pothole, sidewalk, curb and gutter repair.

Possible Pollutants: Fuel, oil, sediment, concrete.

BMPs to address Pollutants:

1. Contractors and in-house staff contracted to complete for these jobs are informed of stormwater management practices to reduce pollution in stormwater.
2. Avoid mixing excess amounts of fresh concrete or cement.
3. Never dispose of washout into the street, storm drains, ditches or creeks.
4. Stencil storm drains to prevent disposal of wash water.
5. Schedule patching, resurfacing and surface sealing during dry weather.
6. If it rains unexpectedly, take appropriate action to prevent pollution of stormwater runoff (e.g., divert runoff around work areas, cover materials).
7. Maintain pollution prevention/good housekeeping practices, which is to remove stockpiles (asphalt materials, sand, etc.) by the end of the day to a covered location. Alternatively, cover the piles if they cannot be moved.

Process for updating assessment: Contractor or project is assessed on an ongoing basis, and problems are addressed when found.

Cold Weather Operations

Maintenance: Plowing, sanding, deicing, snow pile disposal.

Possible Pollutants: Sodium, magnesium, calcium, potassium, chloride, turbidity.

BMPs to address Pollutants:

1. Keep all deicing material covered or in waterproof containers.
2. Prevent deicer drainage to storm sewers.
3. Mechanical removal of as much snow or ice as possible prior to applying deicing chemicals.
4. Proper salt storage management.
5. Maintain application equipment in good working condition.

Process for updating assessment: BMPs will be assessed for effectiveness within 30 days following their addition or removal.

Vehicle Washing

Maintenance: Washing of buses, staff vehicles and maintenance equipment.

Possible Pollutants: Petroleum based wastes, metals, and nutrients.

BMPs to address Pollutants:

1. All vehicle washing and maintenance is to be performed indoors where drains connecting to the sanitary system can receive all wastes.
2. Alternatively, vehicle washing can be performed at a commercial auto wash facility.
3. Alternatively, rinse grass from lawn care equipment on permeable (grassed) areas.

4. School car wash fundraising events will not be permitted on school grounds.

Process for updating assessment: BMPs will be assessed for effectiveness within 30 days following their addition or removal.

Vehicle Maintenance

Possible Pollutants: Petroleum based wastes, metals, and nutrients.

BMPs to address Pollutants:

1. Oil-water separators will be inspected routinely and serviced as necessary to maintain efficiency.
2. All vehicle or equipment maintenance will take place inside or away from storm drains where drains connecting to the sanitary system can receive all wastes.
3. All drains within maintenance garages will be dye tested to assure that no drains flow into the separate storm sewer system.
4. Recycle used motor oil, diesel oil, other vehicle fluids, and vehicle parts whenever possible.

Process for updating assessment: BMPs will be assessed for effectiveness within 30 days following their addition or removal.

Landscaping

Possible Pollutants: Wood chips, sediment, sand, and compost.

BMPs to address Pollutants:

1. Place temporary stockpiled material away from storm drains, and berm or cover stockpiles to prevent material releases into the storm drain. Alternatively, place stockpiles on permeable (grassed) areas.
2. Conduct annual stream bank inspections.
3. Provide adequate buffer areas at stream banks.
4. Proper Storage, handling, and use of pesticides, herbicides, and fertilizers.

Process for updating assessment: BMPs will be assessed for effectiveness within 30 days following their addition or removal.

Land Disturbance

Possible Pollutants: Sediment runoff.

BMPs to address Pollutants:

1. Plan land clearing so soil is not exposed for long periods of time.
2. Place temporary stockpiled material away from storm drains, and berm or cover stockpiles to prevent material releases into the storm drain.
3. Protect against sediment flowing into drains.
4. Install sediment barriers.

Process for updating assessment: BMPs will be assessed for effectiveness within 30 days following their addition or removal.

ASSESSMENT

Pollution prevention inspections ensure that these BMPs are carried out properly. Any issues identified during the inspections will be reviewed and addressed by the Stormwater Manager.

2.6.7 Street Sweeping Procedure, Prioritization & Schedule

PRIORITIZATION

The MDEQ NPDES Phase II Stormwater Discharge Permit requires a procedure for prioritizing owned streets, parking lots, and other impervious infrastructure for street sweeping based on the potential to discharge pollutants. WCS evaluated each facility for the presence of the following factors:

- Potential for polluting activities to be conducted outside
- Proximity to water bodies
- Traffic volume
- Land use
- Absence of any factors

PROCEDURE

WCS does not own or operate sweeping equipment. However, WCS will be proactive and undertake the following activities to reduce the potential to discharge pollutants to surface waters of the state from parking lots and other impervious infrastructures.

1. Conduct seasonal efforts to remove leaves.
2. Inspect parking lot and street areas.
3. Conduct hand sweeping of debris to prevent accumulated wastes.
4. Waste disposal areas will be kept free of litter and debris.
5. Analyze sediment, removed from an inlet cleaning if it is suspected of being contaminated with a hazardous material, prior to disposal. Sediment or materials determined to be hazardous waste will be disposed of in accordance with the Structural BMP Operation & Maintenance Waste Disposal procedures.
6. Contract out street cleaning when appropriate.

This prioritization will be updated as facilities and structural stormwater controls are added, removed, or no longer owned or operated by the applicant following routine inspections, or as traffic volume, land use or sediment and trash accumulation increases.

PRIORITIZATION LEVELS & SCHEDULE

All low, medium and high prioritized parking lots and streets are inspected on the same schedule in an effort to reduce pollutants.

Facility Name	Priority Level of Potential Discharge* (High, Med, Low)	Street Sweeping Schedule
Administration Building	Low	Monthly Inspections and hand sweeping
Colt Elementary School	Low	Monthly Inspections and hand sweeping

Facility Name	Priority Level of Potential Discharge* (High, Med, Low)	Street Sweeping Schedule
East Intermediate School	Low	Monthly Inspections and hand sweeping
Elmwood Elementary School	Low	Monthly Inspections and hand sweeping
Transportation & Maintenance Center	High	Monthly Inspections and hand sweeping
Waverly High School Campus (Waverly High School, Waverly Middle School & Winans Elementary School)	Medium	Monthly Inspections and hand sweeping
Windemere View Elementary School	Low	Monthly Inspections and hand sweeping

If required, following monthly inspections indicating higher traffic volume, land use or sediment and trash accumulation at all low, medium and high prioritized parking lots and streets, the District shall contract a commercial street sweeping company.

DISPOSAL

If a commercial street sweeper is contracted to clean a parking lot and street areas for WCS, the street sweeping activities are subject to the solid waste requirements. Solid waste must be managed under Part 115 requirements. Dispose of the solid waste in a licensed landfill. The contractor hired to do the street sweeping is responsible for proper disposal of the waste material. The contracted sweeping will not be completed when streets are wet, so dewatering of the collected debris should not be required.

2.6.8 Managing Vegetated Properties

WCS has established this policy to prevent or reduce pollutant runoff from vegetated land:

1. WCS requires all contracted personnel who participate in the application of pesticides, to will be trained and licensed by the State of Michigan under the Commercial Pesticide Application Certification Program for relevant categories as applicable, to prevent or reduce pollutant runoff from vegetated land.
2. Whenever practicable, an integrated pest management techniques will be implemented.

2.6.9 Contractor Requirements & Oversight

WCS requires contractors to comply with pollution prevention and good housekeeping BMPs. WCS will perform one or all of the following activities for applicable contractors and projects to comply with all pollution prevention and

good housekeeping BMPs as appropriate and comply with pollution as well as provide oversight to ensure compliance:

- Contractor Notification
- Contractor Training
- Pre-project Meeting/Review
- Periodic Inspections

Prior to conducting work, contractors will be directed to conduct online “Contractor Training”.

2.6.10 Pollution Prevention/Good House Keeping Training

A training program is an important component to effective pollution prevention. Training is required for all employees whose job responsibilities involve municipal or maintenance activities. Training is discussed in detail in Section 3.0 of this SWMP.

2.6.11 Pollution Prevention/Good House Keep – BMP Table

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #1 Structural Control Inventory	Provide an up-to-date inventory of the number of stormwater structural controls for each facility's (i.e. catch basins, detention ponds). Update facilities potential to discharge pollutants (high, medium, low) following the update.	Initial update completed, further updated as needed within 30 days following the completion a new facility or reconstruction/ redevelopment. Ongoing Throughout Permit Cycle	100% of stormwater structural controls inventoried.	Maintain list of inventory and potential to discharge priority level. Submit updated list with progress report, noting if priority levels have changed.	WCS
BMP #2 SWPPP development & implementation (SOP)	Develop a "Stormwater Pollution Prevention Plan (SWPPP)" for maintenance, transportation, and storage facilities/Implement policies & procedures.	Developed & Implemented Ongoing Throughout Permit Cycle	SWPPP completed and 100% of inspections implemented.	Copy of SWPPP and copy of inspections.	WCS
BMP #3 Stormwater Structural Control Inspections	Visually inspect stormwater controls identified on facility maps.	Annually Throughout Permit Cycle	Routine schedule implemented and inspections reviewed by stormwater manager.	Maintain inspection forms/reports.	WCS
BMP #4 Review for BMP's Implemented	While inspecting stormwater controls, review the site for BMPs currently implemented to prevent or reduce pollutant runoff at each facility; such as storm drain stencils, garden areas, areas cleaned, areas repaired, SEMCOG poster placement, Illicit discharge education posters, and spill kits.	Annually Throughout Permit Cycle	Annual inspections completed and reviewed by stormwater manager.	Documentation of inspection findings (number of posters, number of spill kits, inventory of gardens, pictures of stencils, pictures of spill kits).	WCS

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #5 Prioritization of Storm Sewer Locations for Maintenance & Cleaning	Following the inspection, the stormwater controls should be prioritized for cleaning and maintenance. Prioritize locations based on: (1) drainage structures that are designated as consistently generating the highest volumes of trash and/or debris, (2) areas with high amounts of build-up sediment, (3) areas of significant cracking or sinkholes.	Annually Throughout Permit Cycle	Prioritization locations identified.	Copy of prioritization.	WCS
BMP 6 Cleaning & Maintenance (Catch Basin/ Manhole Cleaning)	WCS will ensure that all waste materials generated during operation and maintenance of structural stormwater controls are properly characterized, transported, and disposed as required under State of Michigan PA 451 Part 111 (hazardous wastes), Part 121 (Liquid Industrial By-Products), and Part 115 (solid wastes).	As needed or once per permit cycle Throughout Permit Cycle	Prioritized locations cleaned once per permit cycle. All waste disposed as required.	Copies of Waste Manifests.	WCS
BMP #7 Roadways & Parking Lots	Storm drains stenciled to prevent disposal of wash water into storm drains.	As needed Throughout Permit Cycle	Storm drain stencils inspected and maintained as need.	Copy of work order. Photos of stenciling.	WCS
BMP #8 Cold Weather Operations	Proper salt storage management. Maintain storage bags and equipment in good working condition.	Ongoing Throughout Permit Cycle	Continue proper salt storage and management as previously implemented.	Copy of SWPPP comprehensive inspection report.	WCS

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #9 Vehicle Washing	All vehicle washing and maintenance is to be performed indoors where drains connecting to the sanitary system can receive all wastes.	Ongoing Throughout Permit Cycle	100 % of applicable staff trained on were to wash vehicles.	Copy of sign-in sheets and Agenda (if available).	WCS
	Alternatively, rinse grass from lawn care equipment on permeable (grassed) areas.		100 % of applicable staff trained on were to wash vehicles.	Copy of sign-in sheets and Agenda (if available).	
	School car wash fundraising events will not be permitted on school grounds.		Notice sent to staff regarding policy.	Copy of e-mail or policy.	
BMP #10 Vehicle Maintenance	All drains within maintenance garages will be dye tested to assure that no drains flow into the separate storm sewer system.	Completed, additional testing as needed Throughout Permit Cycle	100% of floor drains inspected.	Copy of inspection report.	WCS
	Oil-water separators will be inspected routinely and serviced as necessary to maintain efficiency.	Annually Throughout Permit Cycle	Oil-water separators cleaned and functioning properly.	Copy of invoices or shipping papers.	
	Recycle used motor oil, diesel oil, other vehicle fluids, and vehicle parts whenever possible.	As needed Throughout Permit Cycle	Reduction in amount of disposed material and amount of material shipped for off-site disposal.	Copy of invoices or shipping papers.	
BMP #11 Stream Bank Inspection	Conduct stream bank inspections. Inspect banks along properties to identify erosion or potential erosion problems and check for water clarity conditions. Properly maintain buffer areas.	Annually Throughout Permit Cycle	100% of bank inspections completed.	Copy of inspection sheets/reports.	WCS

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #12 Land Disturbance	Place temporary stockpiled material away from storm drains, and berm or cover stockpiles to prevent material releases into the storm drain. Protect against sediment flowing into drains.	As needed Throughout Permit Cycle	100 % of applicable staff trained.	Copy of sign-in sheets and Agenda (if available).	WCS
BMP #13 Street Sweeping	Conduct hand sweeping in the parking lots/roadways in the spring and fall.	Monthly Hand Sweeping Throughout Permit Cycle	Inspections completed.	Copy of work order or schedule.	WCS
	Street sweeping conducted by a professional sweeping company.	As needed Throughout Permit Cycle		Copy of invoice or disposal documentation.	
BMP #14 Vegetated Properties (Pesticides)	WCS requires all contracted personnel who participate in the application of pesticides will be trained and licensed by the State of Michigan under the Commercial Pesticide Application Certification Program for relevant categories as applicable, to prevent or reduce pollutant runoff from vegetated land.	Ongoing Throughout Permit Cycle	Application of pesticides will only be completed by trained and licensed applicators.	Documentation of in-house staff license or copy of contractor receipt.	WCS
BMP #15 Contractor Oversight	WCS requires contractors to comply with pollution prevention and good housekeeping BMPs. WCS will complete contractor notification, pre-project meeting and periodic inspections to provide oversight to ensure compliance.	As needed Throughout Permit Cycle	Contractors training and informed of pollution prevention and good housekeeping techniques.	Copy of sign-in sheets, pre-project meeting notes or inspections.	WCS & Contractors/ Vendors
	Direct contractors to online "Contractor Training" prior to conducting work. [All Stormwater Training is outlined in Section 3.0 Training]				

BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #16 Training	Pollution prevention and good housekeeping training.	Once per permit cycle or during the 1 st year of employment Throughout Permit Cycle	Goal of providing training to maintenance staff who work for WCS. [All Stormwater Training is outlined in Section 3.0 Training]	Copy of sign-in sheets and Agenda (if available).	WCS
BMP #17 Pollution Prevention & Good Housekeeping Activities Review	Summary of annual activities for the “Pollution Prevention and Good Housekeeping”.	Annually Throughout Permit Cycle	Annual review of SWMP performed. Maintain copy of SWMP annual review. Determine the level of district involvement and identify areas of improvement.	Maintain copy of SWMP annual review and evaluation information for progress reporting.	WCS

3.0 Training

WCS will provide education and training for applicable employees and contractors using a variety of methods depending on their specific job function. At a minimum, all applicable WCS employees will be required to have general awareness training on the topics included in the PEP. All applicable WCS employees will be required to attend or otherwise obtain general awareness training at least once per permit cycle or during the 1st year of employment.

WCS has implemented a comprehensive staff training program based on each employee's participation and responsibilities under this program. The employee training program is categorized in three (3) separate levels summarized as follows:

LEVEL I TRAINING-General Awareness Training

Level I training is required for all district employees at least once per permit cycle for current employees and during the 1st year of employment for new employees. General Awareness training is provided utilizing GLRC training materials.

LEVEL II TRAINING-General Awareness, Pollution Prevention & Good Housekeeping, and Illicit Discharge Reporting

Level II training is required for all employees whose job responsibilities involve illicit discharge related activities, or indicate a potential to cause, witness, or report and illicit discharge or connection. This training includes the previously described training materials as well as a review of the districts Stormwater Management Program Plan and instruction on identification and notification of illicit discharges or connections. This training is provided to applicable transportation, maintenance, custodial, and food service employees.

LEVEL III TRAINING-Maintenance and Storage Facility Stormwater Pollution Prevention Plans, Lawn Maintenance, and Structural Control Inspection, Maintenance, and Repair Training

Level III training is provided in the form of videos, PowerPoint presentations, and hands-on training. This training is provided to district supervisors, maintenance, and lawn service staff.

LEVEL IV TRAINING (CONTRACTORS) – Contractor Training

Contractors employed by WCS to conduct activities with a potential to impact water quality. Contractor training is provided in the form of an online video produced by Arch Environmental Group titled, **“Stormwater Awareness & Pollution Prevention Training for Contracted Public School District Vendors & Employees”**.

3.1 Training Table

BMP	Description	Measurable Goal	Target Audience	Timeframe
Level I Training	General Awareness Training	Record attendance with sign-in sheets for each training session. WCS will retain records of trainings for future review with regard to SWMP.	All district employees.	Once per permit cycle for current employees and during the 1 st year of employment for new employees. Throughout Permit Cycle
Level II Training	General Awareness, Pollution Prevention & Good Housekeeping, and Illicit Discharge Reporting	Record attendance with sign-in sheets for each training session. WCS will retain records of trainings for future review with regard to SWMP.	In-house custodial, maintenance, transportation and food service employees.	Once during permit cycle current employees and during the 1 st year of employment for new employees. Throughout Permit Cycle
Level III Training	General Awareness, Pollution Prevention & Good Housekeeping, Illicit Discharge Reporting, Maintenance and Storage Facility Stormwater Pollution Prevention Plans, Lawn Maintenance, and Structural Control Inspection, Maintenance, and Repair Training	Record attendance with sign-in sheets for each training session. WCS will retain records of trainings for future review with regard to SWMP.	District supervisors, in-house maintenance, and lawn service staff.	Once every three (3) years within permit cycle for current applicable employees if conducting activities outlined in the SWMP. Throughout Permit Cycle
Contractor Training	Stormwater specific training for on-site contractors.	Require stormwater-specific training for on-site contractors. WCS will provide referral information for contractors to obtain stormwater education through private or state training resources. Additionally, the referral will notify contractors of the location of the current WCS SWMP for review. Obtain records of training for future review of the SWMP.	Contractors employed by WCS to conduct activities with a potential to impact water quality.	At the time of employment. Throughout Permit Cycle

4.0 Total Maximum Daily Load (TMDL) Restrictions

4.1 What are TMDLs?

When a lake or stream fails to meet federal water quality standards, the Clean Water Act requires that a “Total Maximum Daily Load (TMDL)” limit be developed. Studies are completed to determine the sources impacting the water body and to develop goals so that the water body can meet the applicable standards.

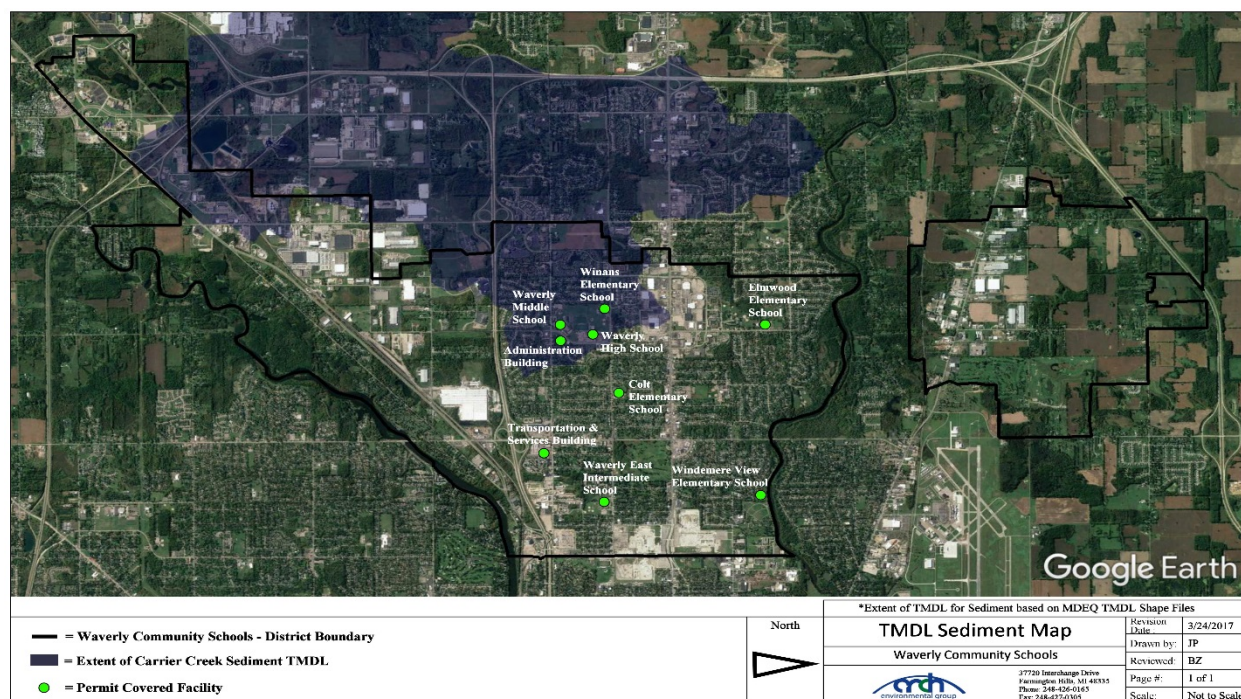
A TMDL describes the process used to determine how much of a particular pollutant a lake or stream can assimilate and sets pollution reduction targets for the water body.

WCS will review and prioritize BMPs currently implemented or to be implemented during the permit cycle to make progress toward achieving the pollutant load reduction requirement in each TMDL identified. TMDLs assigned the discharges for WCS are described in the below sections.

3.2 Carrier Creek Sub Watershed – Grand River

The impaired designated use for Carrier Creek is aquatic life. Rule 100(1)(f) requires that all surface waters of the state are designated for and shall be protected for, among other things, aquatic life and wildlife. Because the quality of the biota in the creek have been reduced due to habitat loss resulting from excessive sediment deposition, achievement of the WQS for designated uses for Carrier Creek will be demonstrated by using an assessment of the macroinvertebrate community, as well as in-stream habitat as it relates to sediment.

Map 3 – Total Maximum Daily Load Map³

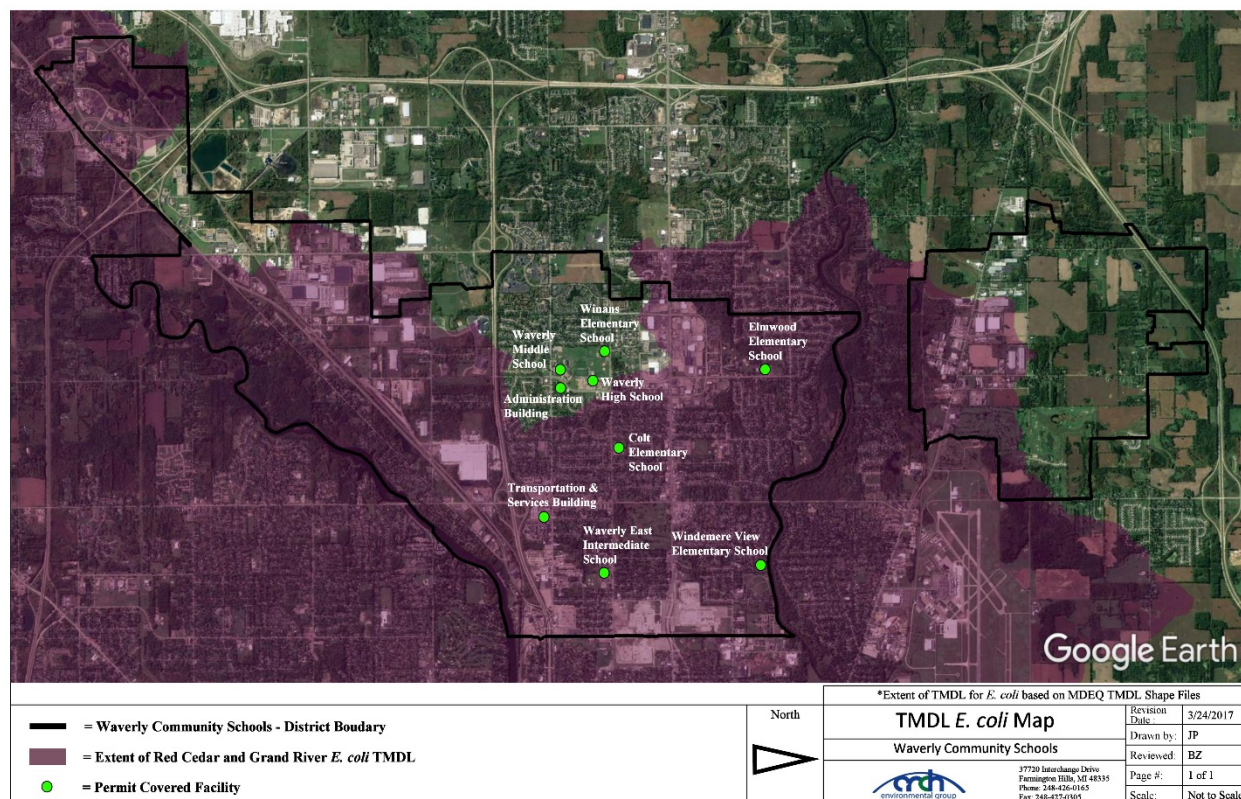


³ Total maximum daily load boundaries based on Michigan Department of Environmental Quality Water Quality Standards Shapefiles.

3.3 Grand River

The Grand River was placed on the Section 303(d) list due to impairment of recreational uses as indicated by the presence of elevated levels of *E. coli* (Wolf and Wuycheck, 2004).

Map 4 – Total Maximum Daily Load Map⁴



3.4 TMDL Implementation – Monitoring Plan

3.4.1 Prioritized TMDL Best Management Practices

The below lists stormwater BMPs that are targeted to improve water quality impairments associated by the TMDL.

E. COLI

1. WCS will use its website to provide the public with information regarding pet waste (SEMCOG links/GLRC). Additionally, GLRC posters are placed at various school buildings.
2. WCS will prohibit illicit discharges, inspect and monitor suspected illicit discharges, and enforce elimination of the illicit discharges and connections.
3. WCS has reviewed all facilities for cross-connections between the sanitary and storm sewer systems.
4. WCS will conduct hand sweeping in the parking lots/roadways monthly.

⁴ Total maximum daily load boundaries based on Michigan Department of Environmental Quality Water Quality Standards Shapefiles.

5. WCS has established programs for soil erosion and sediment control from new or redevelopment construction. Such developments require permits and inspections for practices to keep exposed soils on site or controlled from runoff.
6. WCS has implemented routine visual inspections of stormwater structural controls.
7. WCS will remove excessive sediments from structural sediment removal systems to maintain the maximum designed performance. Sediments will be disposed of offsite in accordance with Parts 115 or 121.

ALL TMDLs

1. WCS will continue to use its website to provide the public information regarding local TMDL issues (phosphorous, E.coli, biota and dissolved oxygen TMDL Best Management Practice).
2. WCS will continue to educate staff, faculty, and students using various venues including educational materials developed by the various watershed groups specifically related to these issues on the stormwater management webpage.
3. The district passed a post-construction stormwater board resolution to require implementation of the stormwater standards for construction.
4. Adequately maintains vegetation around stormwater facilities, ditches, and ponds.
5. Provide training to applicable staff and confirm training from contractors including restrictions on the use of phosphorous containing fertilizers, soaps, cleaners and other chemicals that could impact the separate storm drain system.

Procedure

Prioritization of BMPs is based on WCS targeted TMDL pollutants. Priority is given to BMPs that reduce E. coli loads and address water quality for biota.

Assessment

The MDEQ Phase II Stormwater Discharge Permit Application requires a monitoring plan for assessing the effectiveness of the BMPs currently being implemented, or to be implemented, in making progress toward achieving the TMDL pollutant load reduction requirement. Monitoring shall be specifically for the pollutant identified in the TMDL. Monitoring may include wet weather outfall/discharge point monitoring and dry-weather screening. A summary of the monitoring results and conclusions related to TMDLs will be provided during progress reporting.

WCS will conduct the following for applicable TMDLs:

1. Samples will be collected at least twice during the permit cycle; including previous monitoring. The goal is to collect samples from at least 50% of the outfall/discharge points at facilities associated with the TMDL. An effort will be made to sample water quality parameters during a representative (i.e. >0.25" and <1.5") wet weather event.
2. The results of the sampling will be assessed and summarized in a brief report to be shared with the public via the stormwater webpage at least once during the permit cycle.
3. Samples will be assessed based on the Water Quality Standard for E. coli:
 1. Total Body Contact(May 1- October 31):
Daily Maximum Geometric Mean: 300 E. coli per 100 Milliliters (ml)
30- Day Geometric Mean: 130 E. coli per 100 ml

Waverly Community Schools
Storm Water Management Program Plan (SWMP)

2. Partial Body Contact (All year):

Daily Maximum Geometric Mean: 1,000 E. coli per 100 ml

4. Based on a review of the sampling results, if E. Coli levels are detected above the E. coli Water Quality Standard, additional BMPs will be implemented. If E. coli levels are not detected or detected below the E. coli Water Quality Standard on going BMPs will continue.

5. If E. coli are detected above the E. coli Water Quality Standard, wet-weather samples will be collected in year 4 of the permit to confirm reduced levels

3.4.1 TMDL – BMP Table

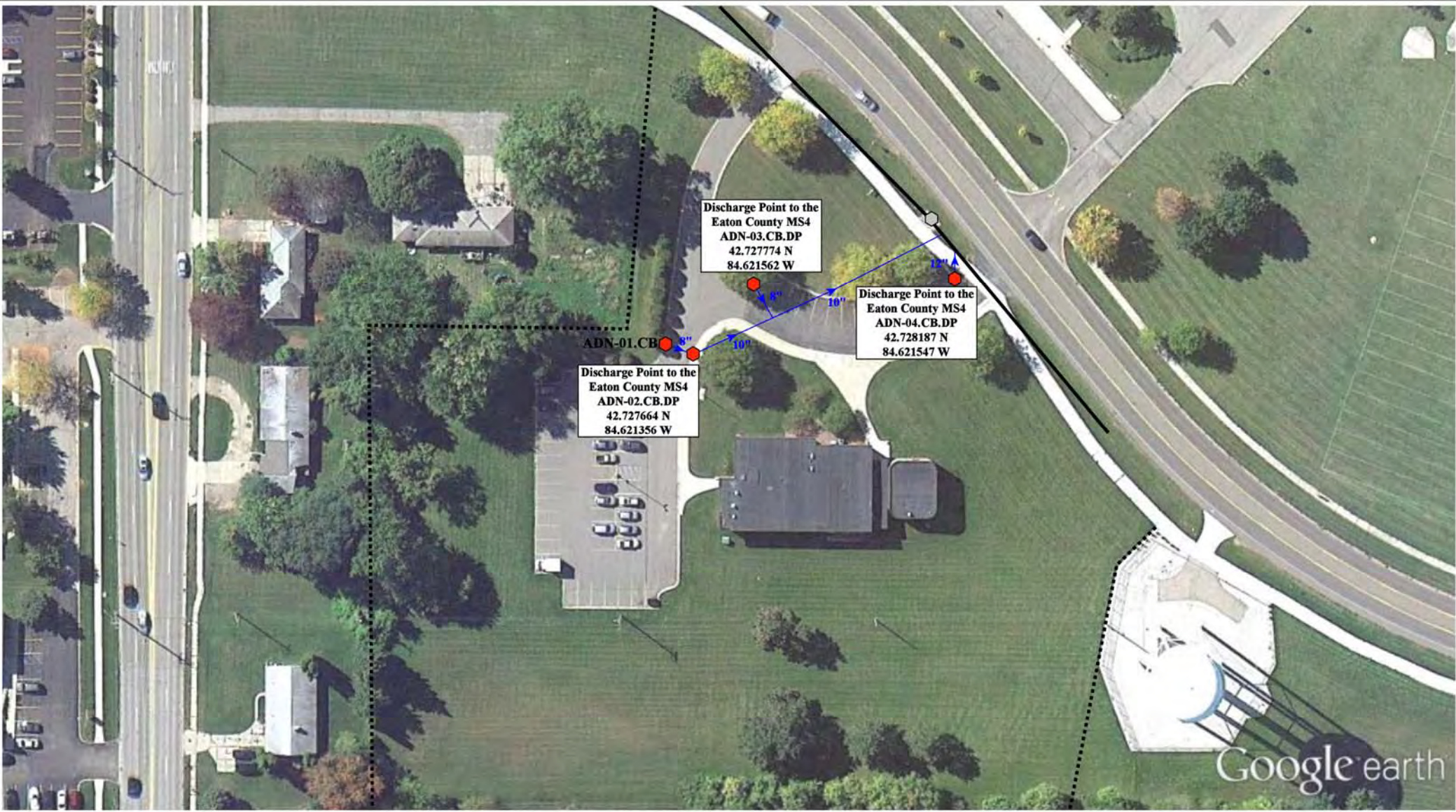
BMP	Description of BMP	Timeframe	Measureable Goal	Measure of Assessment	Responsible Party
BMP #4.5.2.1 Webpage	The District will use its website to provide the public with information regarding pet waste. Additionally, pet waste posters are placed at various school buildings, as needed.	Ongoing Throughout Permit Cycle	Posters placed throughout WCS facilities.	Maintain links on webpage. Maintain copies of webpage review.	WCS
	The District will continue to use its website to provide the public information regarding local TMDL issues (E.coli and biota TMDL Best Management Practices).		Material available on webpages.		
BMP #4.5.2.2 Sampling	Samples will be collected outfall/discharge points at facilities associated with the TMDL. An effort will be made to sample water quality parameters during a representative (i.e. >0.25" and <1.5") wet weather event.	Twice per Permit Cycle Throughout Permit Cycle	The goal is to collect samples from at least 50% of the outfall/points of discharge at facilities associated with the TMDL.	Copy of inspection paperwork and sample results.	WCS
BMP #4.5.2.3 Sample Summary	The results of the sampling will be assessed and summarized in a brief report to be shared with the public via the stormwater webpage at least once during the permit cycle.	Once per Permit Cycle Throughout Permit Cycle	Report available for public review.	Report completed and available on webpage.	WCS

APPENDIX “A”

WCS Outfall/Discharge Point Receiving Water Table & Site Stormwater Structure Maps

Waverly Community Schools
Receiving Waters Table

Facility	Outfall/Discharge Point	Receiving Waters
Administration Building	ADN-02.CB.DP	Grand River
	ADN-03.CB.DP	Grand River
	ADN-04.CB.DP	Grand River
Colt Elementary School	CTL-04.FS.DP	Grand River
	CTL-07.CB.DP	Grand River
	CTL-08.MH.DP	Grand River
East Intermediate School	WEL-01.MH.DP	Grand River
	WEL-07.MH.DP	Grand River
	WEL-08.CB.DP	Grand River
	WEL-09.CB.DP	Grand River
	WEL-10.MH.DP	Grand River
Elmwood Elementary School	EWD-05.CB.DP	Grand River
Transportation & Maintenance Center	WTM-01.CB.DP	Grand River
Waverly High School Campus (Waverly HS, Waverly MS, Winans Elementary)	WVC-03.MH.DP	Grand River
	WVC-42.MH.DP	Grand River
	WVC-95.UDS.DP	Grand River
Windemere View Elementary School	WNR-09.OP.OF	Grand River



= Catch Basin

= Eaton County MS4

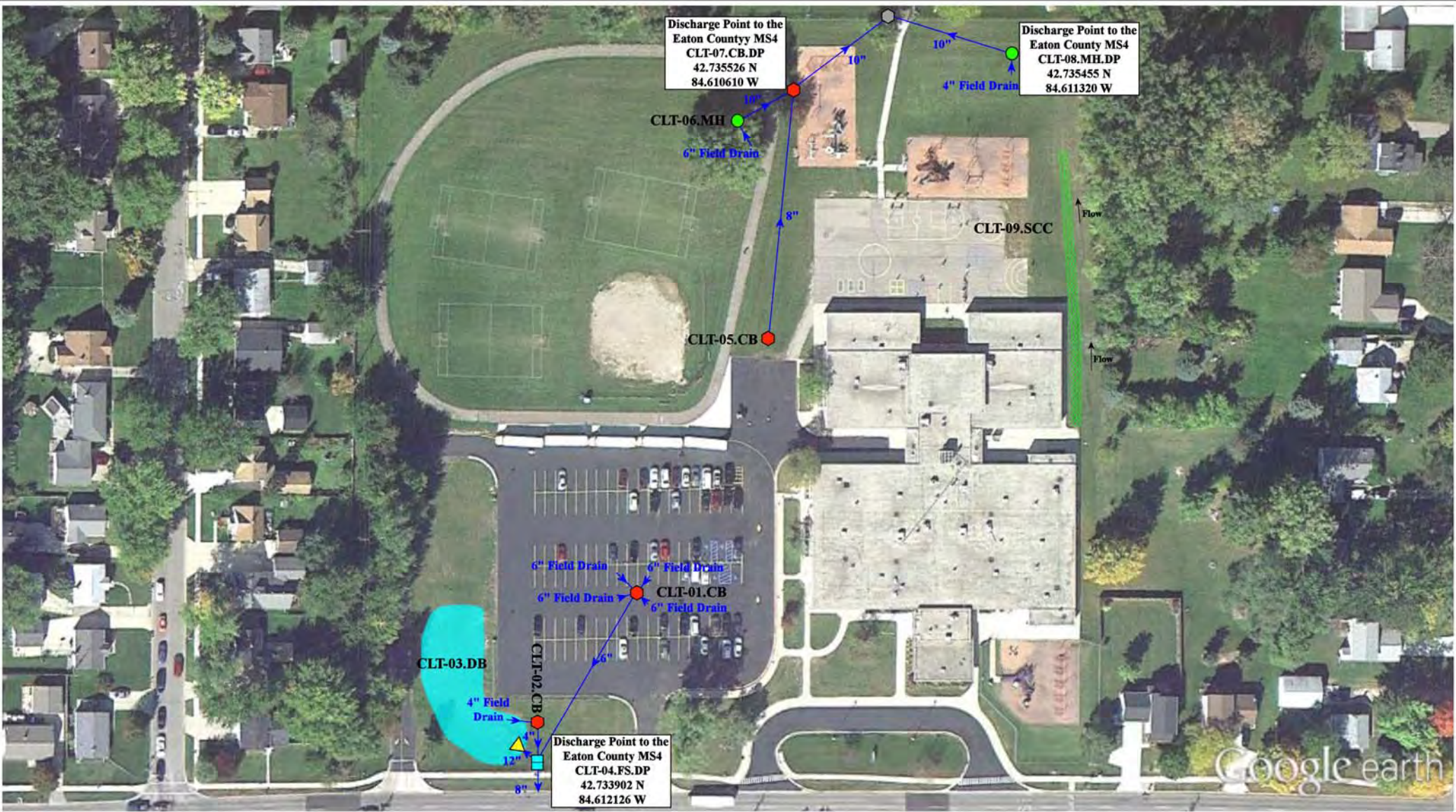
= Property Line

North

Administration Building

Waverly Community Schools

Date:	04/8/2013
Drawn by:	JOF
Reviewed:	JGS
Page #:	1 of 1
Scale:	Not to Scale



- ◆ = Catch Basin
- = Manhole
- ▲ = Open Pipe Outlet
- = Flow Splitter
- = Detention Basin
- = Stormwater Conveyance Channel
- = Eaton County MS4

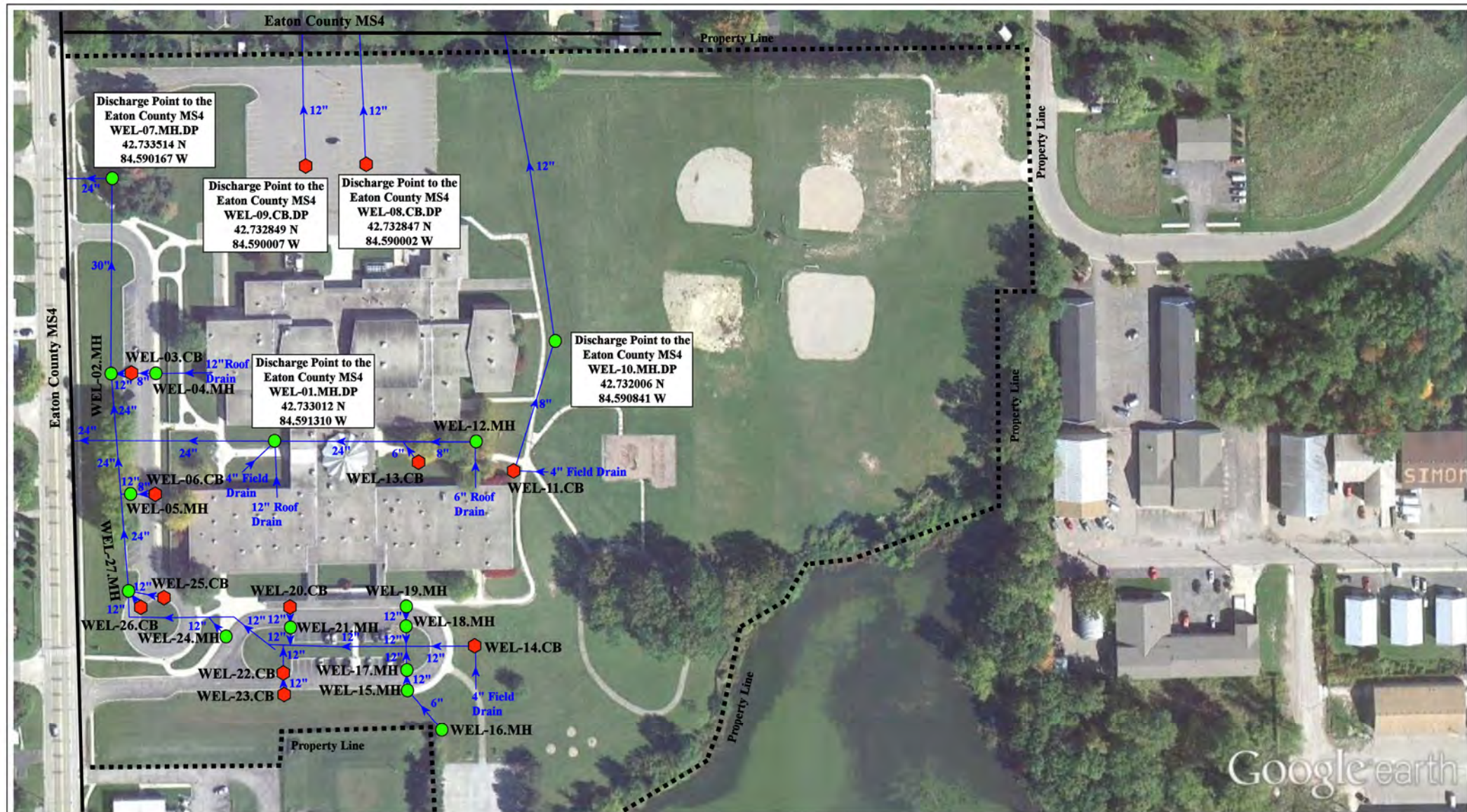


Colt Elementary School

Waverly Community Schools



Date:	04/09/2013
Drawn by:	JOF
Reviewed:	CMC
Page #:	1 of 1
Scale:	Not to Scale



- = Catch Basin
- = Manhole
- = Eaton County MS4

North

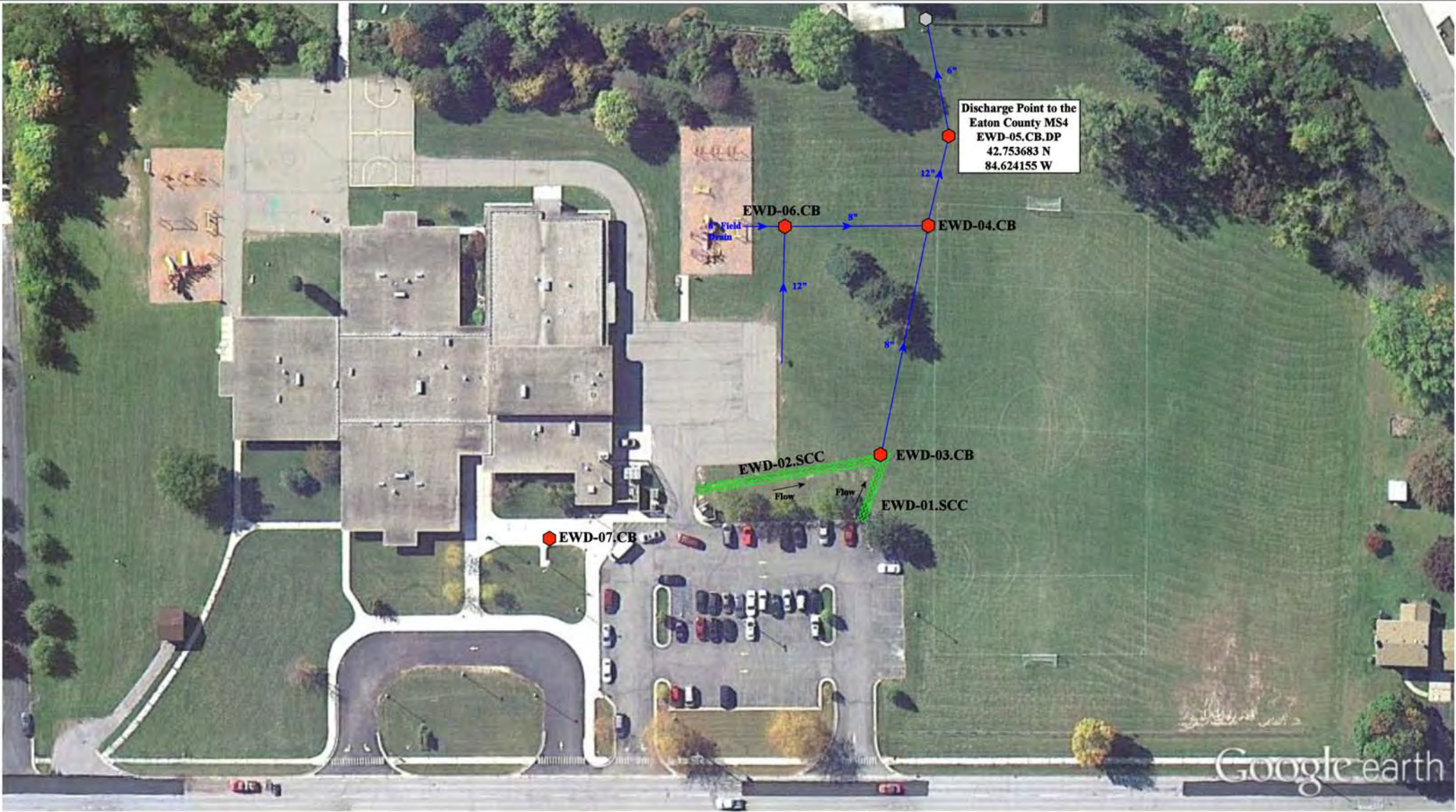


East Intermediate School

Waverly Community Schools



Date:	04/18/2013
Drawn by:	JOF
Reviewed:	CMC
Page #:	1 of 1
Scale:	Not to Scale



- = Catch Basin
- = Eaton County MS4
- ▬ = Stormwater Conveyance Channel

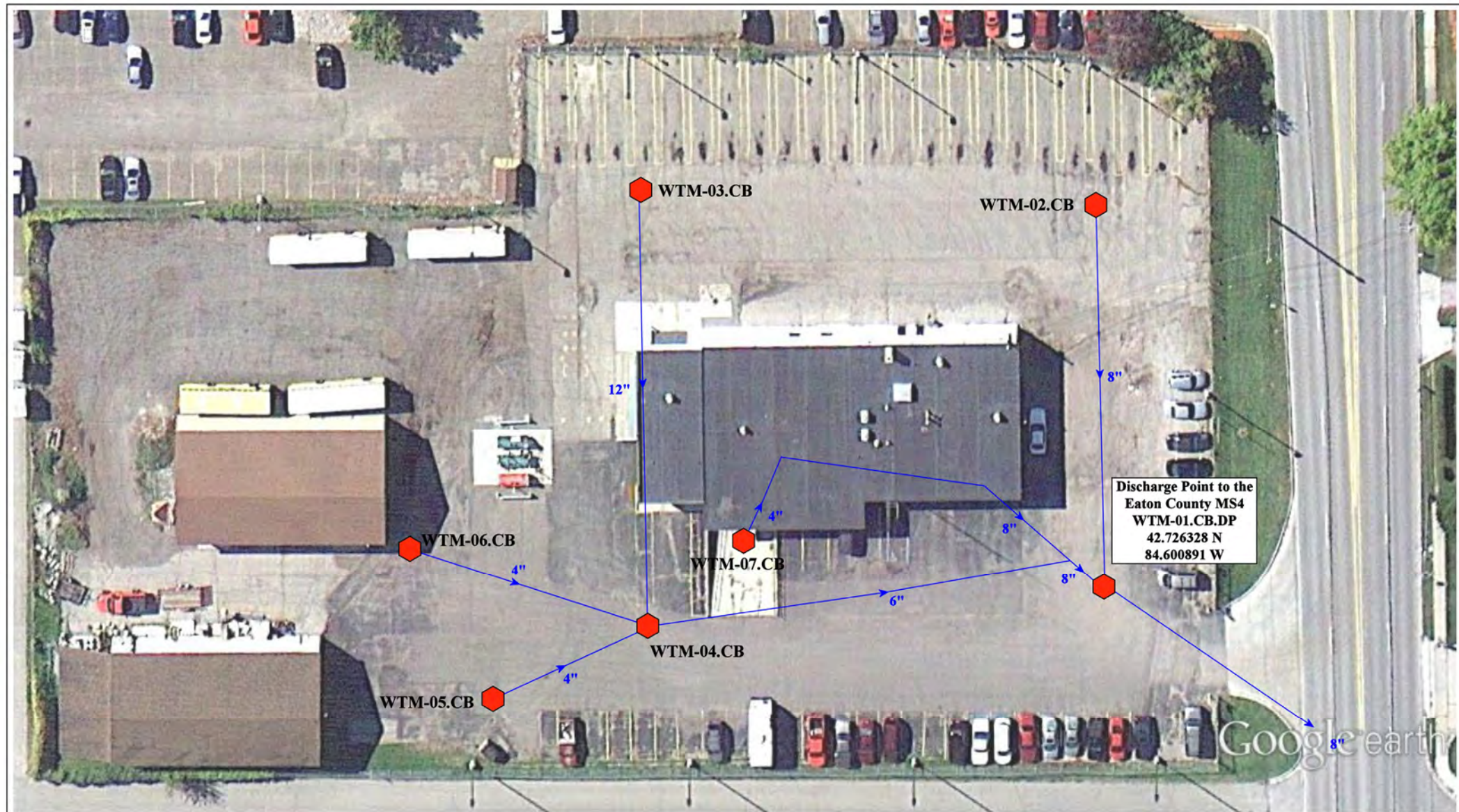


Elmwood Elementary School

Waverly Community Schools



Date:	04/09/2013
Drawn by:	JOF
Reviewed:	CMC
Page #:	1 of 1
Scale:	Not to Scale



 = Catch Basin

North



Transportation & Maintenance Center

Waverly Community Schools

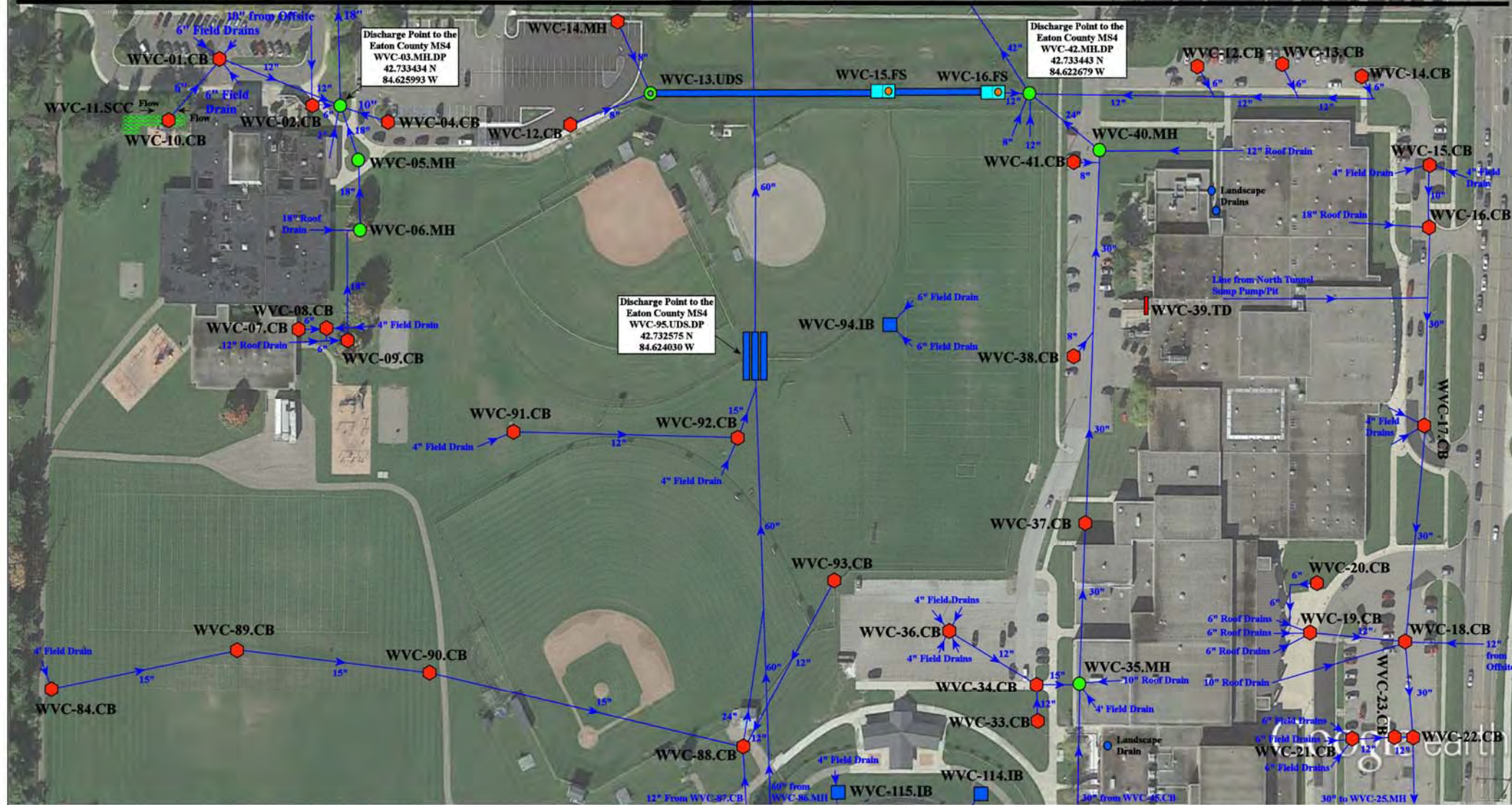


Date:	4/19/2013
Drawn by:	JOF
Reviewed:	CMC
Page #:	1 of 1
Scale:	Not to Scale

Eaton County MS4

Eaton County MS4

Eaton County MS4



= Catch Basin

= Manhole

= Infiltration Basin

= Underground Detention System

= Stormwater Conveyance Channel

= Trench Drain

= Flow Splitter

= Infiltration Manhole

North



Waverly High School Campus
(Waverly H.S., Waverly M.S., Winans Elementary)

Waverly Community Schools



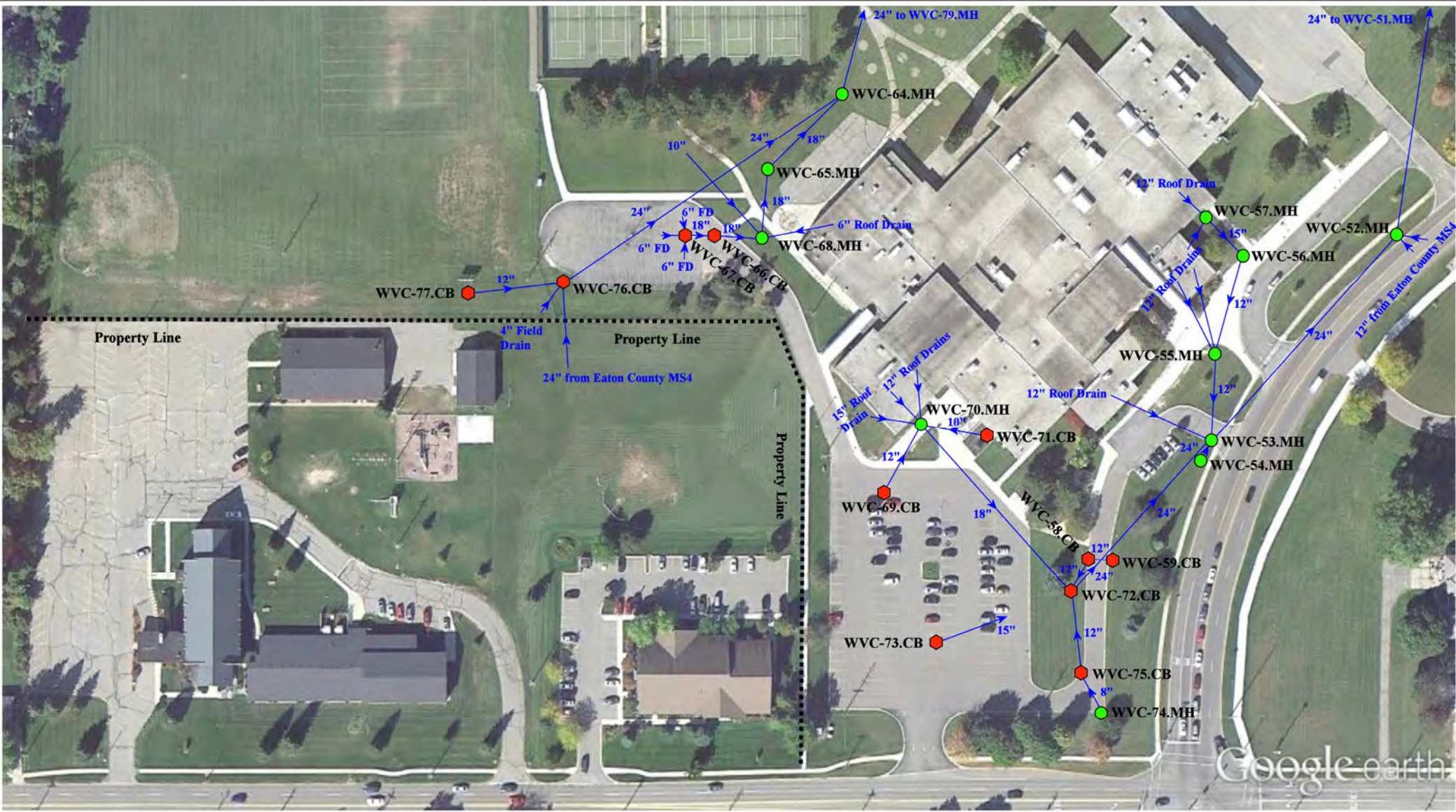
Date: 3/27/2017

Drawn by: JOF

Reviewed: CMC

Page #: 1 of 3

Scale: Not to Scale



● = Catch Basin

● = Manhole

North



Waverly High School Campus
(Waverly H.S, Waverly M.S, Winans Elementary)
Waverly Community Schools



Date:	4/16/2013
Drawn by:	JOF
Reviewed:	CMC
Page #:	3 of 3
Scale:	Not to Scale



- = Catch Basin
- = Manhole
- = Infiltration Basin
- ▲ = Open Pipe Outlet
- = Riprap



Windemere View Elementary School

Waverly Community Schools



Date:	4/16/2013
Drawn by:	JOF
Reviewed:	CMC
Page #:	1 of 1
Scale:	Not to Scale

APPENDIX “B”

School Board Policy Resolution, Post-Construction Stormwater Runoff Policy & Procedures & MS4 Noncompliance Enforcement Tracking Sheet

Post-Construction Stormwater Runoff Program Policy & Procedures

Waverly Community School District
Eaton County, Michigan

Revision Date: May 14, 2015





Table of Contents

1.0	Purpose and Overview
2.0	Water Quality Treatment Performance Standards
3.0	Channel Protection Performance Standard
4.0	Site Specific Criteria
5.0	Site Plan Review
6.0	Long Term Operation & Maintenance of BMPs
7.0	Summary
8.0	School Board Resolution

1.0 PURPOSE AND OVERVIEW

Prevention of pollution from stormwater runoff and the protection of the quality of the waters of the State of Michigan are of utmost importance to the Waverly Community Schools (WCS). WCS currently owns and operates separate storm sewer systems that discharge to surface waters or other municipal storm sewer systems (MS4) and is covered under a Certificate of Coverage (COC) issued to WCS by the Michigan Department of Environmental Quality (MDEQ).

The post-construction stormwater run-off controls are necessary to maintain or restore stable hydrology in receiving waters by limiting surface runoff rates and volumes and reducing pollutant loadings from sites that undergo development or significant redevelopment.

This policy is to establish the post construction stormwater runoff control standards. The objects of this program and associated procedures are to:

- a. Develop and implement regulatory mechanisms to address post-construction stormwater runoff for new development and redevelopment projects, including preventing or minimizing water quality impacts.
- b. Develop and implement regulatory mechanisms for projects that disturb one or more acre, including projects less than an acre that are part of a larger common plan of development or sale and discharge into the applicants MS4.
- c. Ensure post construction controls to minimize water quality impacts by following water quality treatment standards.
- d. Require that BMP's be designed on a site-specific basis to reduce post-development total suspended solids loading.
- e. Procedure for the use of Infiltration BMP's to meet water quality treatment and channel protection standards of new development or redevelopment projects.
- f. Address "hot spots".
- g. Submit site development plans for review and approval.
- h. Require adequate long-term O&M of BMPs by ordinance or other regulatory mean

Waverly Community Schools (WCS) has developed and passed a board policy resolution on February 23, 2013, to direct compliance with these requirements. In addition to the board policy resolution, the following sections identify specific actions to be taken by WCS to ensure compliance with the applicable standards. The board resolution is provided in Section 9.0.

2.0 WATER QUALITY TREATMENT PERFORMANCE STANDARD

This policy is to establish WCS goal to include water quality treatment volume standards for each new construction or redevelopment of projects where the area of disturbance exceeds one (1) acre as required by the MDEQ NPDES Phase II Stormwater Discharge Permit. One or more of the following treatment standards should be included as part:

1. Treat the first one inch of runoff from the area of new construction or redevelopment, or
2. Treat the runoff generated ninety percent (90%) of all runoff-producing storms for the project site.

The source of the rainfall data for the water quality treatment standard of requiring the treatment of the runoff generated from the ninety percent (90%) of all runoff-producing storms is:

- The MDEQ memo dated March 24, 2006, which is available via the internet at www.michigan.gov/documents/deq/lwm-hsu-nps-ninety-percent_198401_7.pdf.

Treatment methods shall be designed on a site-specific basis to achieve the following:

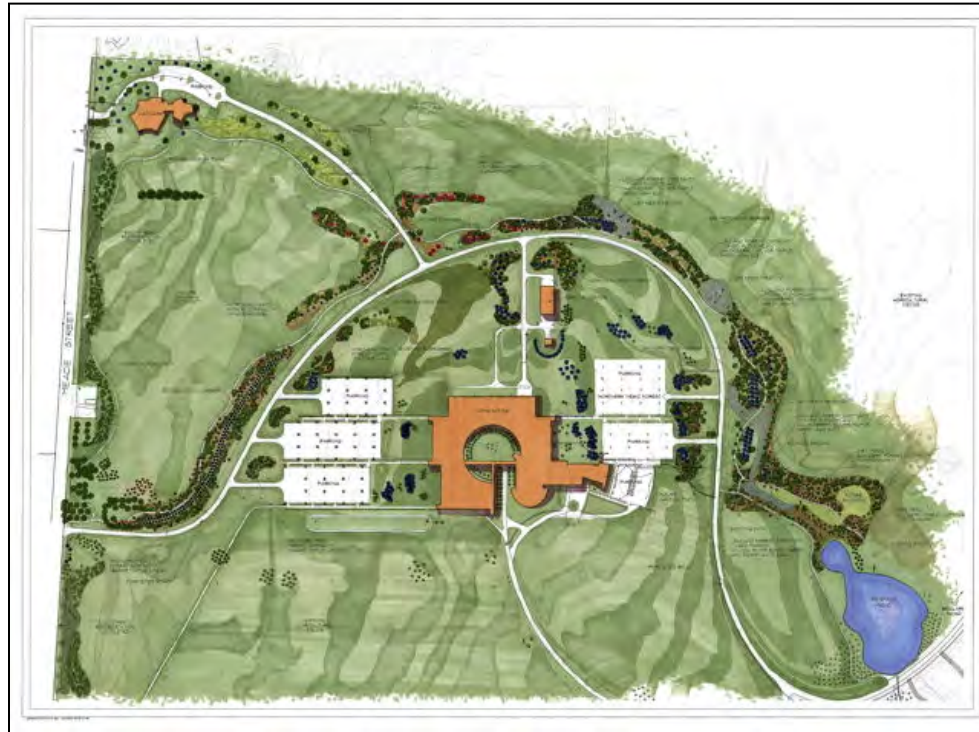
1. A minimum of eighty percent (80%) removal of total suspended solids (TSS), as compared with uncontrolled runoff, or
2. Discharge concentrations of TSS not to exceed 80 milligrams per liter (80mg/L).

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

Treatment methods shall be designed on a site specific basis to reduce the discharge of sedimentation or TSS from the site. Such methods may include:

1. Stand pipe filters in storm water detention basins
2. Sediment filter tanks
3. Catch basin sumps
4. Aqua-Swirls®
5. Treatment trains
6. Rain Gardens
7. Pervious pavement systems

See the following graphic examples of treatment options.



Sample school site showing green space and infiltration are

3.0 CHANNEL PROTECTION PERFORMANCE STANDARD

This policy is to establish WCS goal to address runoff rate and volume of discharges as required by the MDEQ NPDES Phase II Stormwater Discharge Permit.

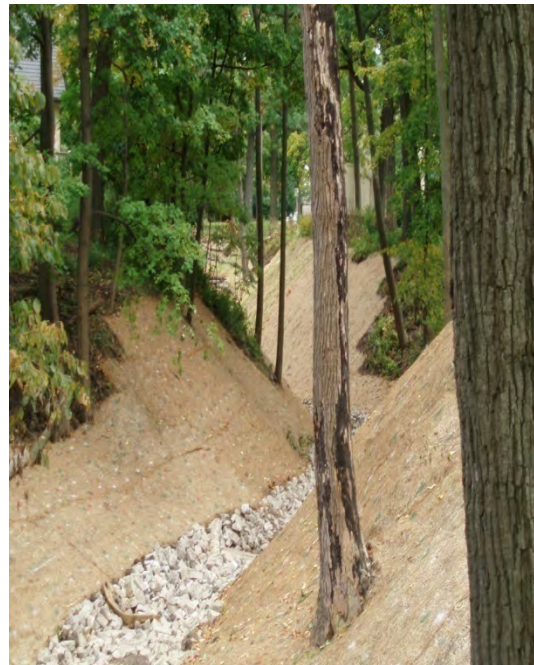
Waverly Community Schools understands that channel protection criteria is necessary to maintain post-development stormwater runoff volumes and peak flow rates at or below existing levels for all storms up to the 2-year, 24-hour event. "Existing Levels" means the runoff volume and peak flow rate for the last land use prior to the planned new development or redevelopment.

Where more restrictive channel protection criteria already exists, or is needed to meet the goals of reducing runoff volume and peak flows to less than existing levels on lands being developed or redeveloped, Waverly Community Schools will consider use of the more restrictive criteria rather than the standard permit requirements.

A post-construction stormwater runoff program compliance assistance document is available via the internet at www.michigan.gov/documents/deq/wb-storm-ms4-runoffvolume_331235_7.xls.



Before channel protection



With channel protection

4.0 SITE SPECIFIC CRITERIA

This policy is to establish WCS goal to address establish site specific requirements as required by the MDEQ NPDES Phase II Stormwater Discharge Permit. Because each site has its' own special circumstances and conditions the following BMPs will be used as appropriate according to site conditions.

- Reduce runoff from the site to greatest extent possible (provide holding basins, divert water through grassed swales).
- Prevent spills and discharges.
- Control waste such as building materials, concrete washout, chemicals, litter, and sanitary waste.
- Phasing will be considered to limit amount of exposed soils.
- Interim soils stabilization methods are to be considered (temporary seeding, mulching etc.).
- Buffer preservation (avoid exposing soils to property limits).
- Inspection staff will be trained in the proper maintenance and operation of Soil Erosion and Silt Prevention measures.

Waverly Community Schools will review construction plans for sites with known soil and/or groundwater contamination, including potential “hot spots” and evaluate the use of infiltration BMPs to meet water quality treatment and channel protection criteria. Hot spots include areas with the potential for significant pollutant loading such as vehicle service and maintenance facilities, vehicle equipment cleaning facilities, fleet storage areas for buses, and outdoor liquid container storage.

Additional water quality standards or pretreatment measures may be required in addition to those included in the water quality criteria in order to remove potential pollutant loadings from entering either groundwater or surface water systems.

Pretreatment measures include:

Stormwater Hot Spots	Minimum Pre-Treatment Options
Vehicle service and maintenance facilities	1. Oil/Water Separators/Hydrodynamic Devices. 2. Use of Drip Pans and/or Dry Sweep Material under Vehicles/Equipment 3. Use of Absorbent Devices to Reduce Liquid Releases 4. Spill Prevention Response Program
Fleet storage areas for buses	BMPs that are part of a Stormwater Pollution Prevention Plan (SWPPP)
Vehicle Fueling Stations	1. Oil/Water Separators/Hydrodynamic Devices 2. Water Quality Inserts for Inlets 3. Spill Prevention Response Program
Vehicle equipment cleaning facilities	BMPs that are part of a Stormwater Pollution Prevention Plan (SWPPP)
Outdoor liquid container storage	Spill Prevention Response Program

5.0 SITE PLAN REVIEW

This policy is to establish requirement to submit a site plan for review as required by the MDEQ NPDES Phase II Stormwater Discharge Permit. WCS will prepare and submit a written application, including a site plan for review and approval of post-construction stormwater runoff BMPs, for all new construction or redevelopment projects where the area of disturbance exceeds one (1) acre. The application will be completed in a form and manner as prescribed by the local municipality or governing unit in which the property is located. The site plan will be reviewed by the appropriate local municipal, county, state or other governmental agency. The review of the stormwater site plan will provide WCS with the ability to ensure that water quality objectives, erosion and sediment control requirements, and BMP maintenance are adequately considered.

The goal of the site plan review is to:

1. Minimize clearing and grading.
2. Protect waterways.
3. Limit soil exposure.
4. Protect steep slopes and cuts.



6.0 OPERATION AND MAINTENANCE OF STORMWATER CONTROLS

Waverly Community Schools will identify all stormwater controls and mechanisms for all new construction or redevelopment projects where the area of disturbance exceeds one (1) or more acres. WCS will develop *“BMP Operation and Maintenance”* guidance manuals for each property, including:

- Develop a map of each facility identifying the location and type of structural controls, if any exist.
- Develop a guidance manual that will provide a listing of structural controls including a site diagram showing the location of each control, instructions for inspection and operation, and the inspection and/or maintenance schedules for each control mechanism.
- Storm water runoff facilities, after construction and approval, shall be maintained in good condition, in accordance with the approved storm water plan.
- Update and revise the stormwater structural controls on facility site diagrams as identified during scheduled inspections or within 30 days following the completion a new facility or reconstruction/redevelopment site project.

The Director of Maintenance and Operations will ensure that local work instructions are developed based on BMP and O&M Guidance Manuals. WCS trained staff or certified contractors will conduct routine inspection of all identified structural controls and complete maintenance, repair, or replacement as necessary.



Example of a rain garden utilizing natural vegetation and eliminates the cost of lawn maintenance.

7.0 SUMMARY

The Waverly Community Schools is committed to practicing sound stormwater management practices and to observance and adherence to all local, state and federal stormwater policies to the greatest extent possible. WCS strives to be a good steward of the lands and waterways located within its jurisdiction. The goal of this ***“Post-Construction Stormwater Runoff Program, Policy & Procedures”*** resolution is to implement and enforce a program to minimize stormwater discharges and to improve the water quality into the drainage system from new and redevelopment projects.

8.0 BOARD RESOLUTION

Waverly Community School District BOARD RESOLUTION

WHEREAS, Waverly Community School District (WCSD) owns and operates facilities within the boundaries of the "Lansing" urbanized area which discharges storm water to a municipal separate storm sewer system (MS4); and

WHEREAS, The Michigan Department of Environmental Quality – Water Bureau maintains oversight and regulatory authority for compliance with the terms and conditions of the NPDES Municipal Separate Storm Sewer System discharge permit; and

WHEREAS, Waverly Community School District has applied for and received a permit to discharge storm water from Waverly Community School District facilities to the MS4; and

WHEREAS, Waverly Community School District agrees to comply with the NPDES Municipal Separate Storm Sewer System discharge permit requirements, and

WHEREAS, Waverly Community School District has developed a "Stormwater Management Program Plan (SWMP)" outlining the policies, procedures, and best management practices to be employed by the district to comply with the permit requirements, and

WHEREAS, the conditions of the NPDES Municipal Separate Storm Sewer System discharge permit require Waverly Community School District to develop and implement policies and procedures to ensure compliance with post-construction storm water discharges for new development and redevelopment projects containing an area of disturbance exceeding 1 acre, and

WHEREAS, Waverly Community School District agrees to obtain a construction site permit from the local municipality or other governing unit for new development and redevelopment projects that disturb an area exceeding 1 acre, and

WHEREAS, Waverly Community School District agrees to inspect, operate, and maintain structural controls for the purpose of reducing pollutant contribution, control runoff, and decrease or eliminate stream bank erosion due to storm water runoff.

THEREFORE, be it resolved that the Waverly Community School District Board of Education is highly committed to practicing sound environmental principals including the discharging of storm water. The Board hereby approves and instructs the district Superintendent to enforce the above listed policies and procedures for control of storm water runoff and long-term operation and maintenance of structural controls as part of the overall WCSD Stormwater Management Program Plan.

Duly passed and approved by the Waverly School District Board, Eaton County, Michigan this 25th day of February, 2013.

Approved:



President

Attest:



Secretary

Municipal Separate Storm Sewer System Noncompliance Enforcement Tracking
Waverly Community Schools

Report Number	Name	Date	Location of Violation	Business/ Organization	Description of Violation	Description of Enforcement Response	Compliance Schedule Date	Date Violation Resolved
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								

Municipal Separate Storm Sewer System Noncompliance Enforcement Tracking
Waverly Community Schools

Report Number	Name	Date	Location of Violation	Business/ Organization	Description of Violation	Description of Enforcement Response	Compliance Schedule Date	Date Violation Resolved
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								

Appendix “C”

Greater Lansing Regional Committee for Stormwater Management’s PEP Plan & Posters



What goes
on the ground
ends up in our
WATER.

Pour
sparingly.

pollutionisntpretty.org

**GASOLINE
WEED KILLER
NAIL POLISH
MOTOR OIL
FERTILIZER**



pollutionisntpretty.org



**Pet waste on
the ground
means
E.coli in our**



WATER.

**Clean up
after
your pup.**

pollutionisntpretty.org



POLLUTION

ISN'T PRETTY.ORG



POLLUTION

ISN'T PRETTY.ORG



Greater Lansing Regional Committee for Stormwater Management

Public Education Plan



REVISED: JULY 2018

TABLE OF CONTENTS

INTRODUCTION.....	1
A. PUBLIC PARTICIPATION PROCEDURE – GLRC WEBSITE	1
B. EVALUATION AND PRIORITIZATION PROCEDURES	2
C. REQUIRED TOPIC AREAS.....	3
D. PUBLIC EDUCATION PLAN IMPLEMENTATION	4
(A) Promote public responsibility and stewardship in the applicant’s watershed(s).	4
(B) Inform and educate the public about the connection of the MS4 to area waterbodies and the potential impacts discharges could have on surface waters of the state.....	7
(C) Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4.	8
(D) Promote preferred cleaning materials and procedures for car, pavement, and power washing.	8
(E) Inform and educate the public on proper application and disposal of pesticides, herbicides, and fertilizers.	8
(F) Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter into the MS4.....	8
(G) Identify and promote the availability, location, and requirements of facilities for collection or disposal of household hazardous waste, travel trailer sanitary wastes, chemicals, yard wastes, and motor vehicle fluids.....	9
(H) Inform and educate the public on proper septic system care and maintenance, and how to recognize system failure.	10
(I) Educate the public on, and promote the benefits of, green infrastructure and Low Impact Development.	10
(J) Identify and educate commercial, industrial, and institutional entities likely to contribute pollutants to stormwater runoff.....	11

INTRODUCTION

The Public Education Plan (PEP) is being prepared for the communities of the Greater Lansing Regional Committee for Stormwater Management (GLRC) to comply with the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit requirements. This creates a concise document for members and the PEP Committee to work from throughout the permit cycle (2018-2023).

The original PEP was completed in 2003, updated in 2006, 2010, and 2013, and this current version of the PEP will be submitted to the Michigan Department of Environmental Quality (MDEQ) in the summer of 2018. The PEP was written for all GLRC members to guide the development and implementation of strategies aimed at educating the public on a regional and watershed level. However, each permittee will take their specific watershed and community characteristics into consideration throughout PEP implementation. Where applicable, each member has included their specific individual efforts throughout the PEP.

GLRC members participating in the PEP are as follows:

City of DeWitt	Lansing Charter Township
City of East Lansing	Meridian Township
City of Grand Ledge	Lansing School District
City of Lansing	Clinton County
City of Mason	Eaton County
Delhi Charter Township	Ingham County
Delta Charter Township	Michigan State University
DeWitt Charter Township	Waverly Community Schools

A. PUBLIC PARTICIPATION PROCEDURE – GLRC WEBSITE/SOCIAL MEDIA

As required, permittees commit to keeping their Stormwater Management Plan (SWMP) current and publicly available on their community website. Local public notice requirements will be met as appropriate, and both the SWMP and contact information will be provided to encourage public review. The public will be invited to participate in the implementation and periodic review of the SWMP, which will be accomplished through each community website and the GLRC website. When the progress reports are submitted to MDEQ, they will be posted on the GLRC and community websites. This will update the public and invite them to participate or provide input related to the implementation of the SWMP if they choose to.

In addition, the PEP, progress reports and other appropriate supporting documents will be posted on the GLRC website. The GLRC website serves as one of our strongest tools for information sharing with the public. All GLRC documents (template manuals, progress reports, implementation materials, brochures, quarterly newsletters, annual reports, etc.) are available on the GLRC website. The GLRC maintains a calendar that announces public meeting information, workshops, trainings and events.

The GLRC also recognizes the importance of social media. Our existing Facebook and Twitter accounts help us to reach out to different demographics and reach larger audiences. By purchasing Facebook's

“boosted posts”, the GLRC can geographically target the audiences within the urbanized zone and ensure consistent messaging to the residents of all GLRC jurisdictions. The GLRC will continue to annually support the purchase of paid posts from the GLRC Facebook account and track the results using social media analytics. Social media has proven to be an effective tool for outreach communication, and the responsibility of creating and sharing content related to the Required Topic Areas is the GLRC Coordinator’s, indicated by the “social media” Delivery Mechanism in Section D.

B. EVALUATION AND PRIORITIZATION PROCEDURES

The GLRC conducted a water quality survey of residents during the fall of 2006. The purpose of the survey was to provide a benchmark to gauge the effectiveness of regional and local public outreach campaigns on water quality issues in the Greater Lansing Region. The survey results provided a baseline for evaluating the effectiveness of regional and local water quality initiatives over time. These results have been used by the GLRC and other organizations in the region to prioritize and implement public education programs through the most effective and efficient methods possible.

The 2006 survey results can be found here:

[Greater Lansing Regional Water Quality Survey Findings Report 2006](#)

Since a baseline for evaluating the effectiveness of current (and past) water quality initiatives was completed in 2006, the GLRC committed to conducting the survey again in 2012 to identify successes related to the ongoing public education efforts and areas for improvement. The 2012 survey was conducted in the exact same manner as the 2006 survey; both statistically valid surveys ensure the GLRC is effective and efficient in our public education efforts.

The 2012 survey results can be found here:

[Greater Lansing Regional Water Quality Survey Findings Report 2012 \(with comparison data\)](#)

The GLRC PEP Committee conducted another follow up survey in 2018. The survey was conducted in the same manner as the 2006 and 2012 surveys, and will be used to evaluate successes, challenges and to determine the overall effectiveness of the PEP. The PEP Committee will also explore the following options for assessing PEP effectiveness in the new permit cycle: a duplicate of the previous surveys (conducted either in-house or contracted out); the utilization of an online survey; conducting focus groups; or conducting targeted interviews of individuals in the region. This will be completed by the end of the permit cycle, scheduled for October 2023.

During the Progress Report submittal, general evaluation and effectiveness will be discussed and changes could be made based on initial results, as adaptive management is an important part of public education. Evaluation mechanisms are essential to gauge implementation status and assess the effectiveness of the overall program. Identification of quantifiable measures provides both measurability and accountability within the program.

The PEP Committee meets frequently to discuss progress of ongoing activities, review current priorities, track measurable goals and to explore new educational opportunities based on the survey results. The PEP Committee has completed the prioritization at the GLRC level and categorized topics areas as: high, medium and low. The PEP Committee met and reviewed the survey results in detail to determine the priority topic areas. Many factors were considered in this process including the survey results, available resources, cost effective outreach methods, existing public knowledge levels and collaborating with other programs currently underway. Examples of High priority topics areas are: **B. Inform and educate**

the public about the connection of the MS4 to area watersbodies and potential impacts discharges have on surface waters; **C.** Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4; **I.** Educate the public on, and promote the benefits of, green infrastructures and low impact development. The GLRC will report on the measurable goals achieved during the regular Progress Report submissions.

The GLRC also continues to work with several partners in the larger surrounding area to accomplish a variety of public education efforts. In 2013-2014, the Middle Grand River Organization of Watersheds (MGROW) developed “Pollution Isn’t Pretty”, a regional public education campaign to provide educational resources for smaller watershed groups (including the GLRC, friends groups, Middle Grand River Watershed Management Planning Project (319) and the Red Cedar River Watershed Management Planning Project (319)). The GLRC continues to utilize Pollution Isn’t Pretty materials and work with MGROW, conservation districts, and local watershed groups to develop consistent, meaningful public education messages and delivery mechanisms that will benefit the entire region. This effort has and will continue to incorporate the GLRC survey results and several other survey results in the region. The GLRC is confident that our collaborative and individual PEP accomplishments and efforts will continue to be successful and we will work in the most effective, efficient way possible.

C. REQUIRED TOPIC AREAS

The PEP follows the format recommended by the MDEQ and includes the ten topic areas required in the permit.

An adequate PEP will implement a sufficient amount of educational activities to ensure that the targeted audiences are reached with the appropriate message(s) for the following topics:

- (A) Promote public responsibility and stewardship in the applicant’s watershed(s).*
- (B) Inform and educate the public about the connection of the MS4 to area waterbodies and the potential impacts discharges could have on surface waters of the state.*
- (C) Educate the public on illicit discharges and promote public reporting of illicit discharges and improper disposal of materials into the MS4.*
- (D) Promote preferred cleaning materials and procedures for car, pavement, and power washing.*
- (E) Inform and educate the public on proper application and disposal of pesticides, herbicides, and fertilizers.*
- (F) Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter into the MS4.*
- (G) Identify and promote the availability, location, and requirements of facilities for collection or disposal of household hazardous waste, travel trailer sanitary wastes, chemicals, yard wastes, and motor vehicle fluids.*

- (H) *Inform and educate the public on proper septic system care and maintenance, and how to recognize system failure.*
- (I) *Educate the public on, and promote the benefits of, green infrastructure and Low Impact Development.*
- (J) *Identify and educate commercial, industrial, and institutional entities likely to contribute pollutants to stormwater runoff.*

D. PUBLIC EDUCATION PLAN IMPLEMENTATION

Activities listed here correspond directly with the ten topic areas A - J for compliance. The GLRC action plan, **as part of each community's SWMP** details the activities below and includes a schedule and general evaluation mechanisms.

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

Activity: Continue to maintain watershed signage at road and river crossings.

Corresponding topic area: A

Priority: Medium

Target audience: Public

Key message: Promoting local water resources, connecting the public to their surrounding environment. Signs read "You are in the Grand River, Looking Glass, or Red Cedar River Watershed".

Delivery mechanism: Passing vehicles, people biking, walking or running will view the signs.

Year and frequency of implementation: The signs were originally posted between 2005 -2006. They will be maintained indefinitely with help from the local Road Commissions and communities.

Responsible party: **Waverly Community Schools**

Evaluation: Indicate that the signs are still there in Progress Reports.



Activity: Use "Do you know your watershed?" brochure and update as appropriate. An update occurred in 2018.

Corresponding topic area: B

Priority: Medium

Target audience: Public

Key message: The brochure educates the public about what a watershed is, our local watersheds and general information about watershed protection.

Delivery mechanism: Posted on the GLRC website, handed out at public events, available in community lobbies, available during use of the GLRC display.

Year and frequency of implementation: The brochure will be used at all public events (Adopt A River, Quiet Water Symposium, Michigan Water Environment Association (MWEA) Watershed Summit), update as appropriate.

Responsible party: PEP Committee, GLRC Coordinator and **Waverly Community Schools**.

Evaluation: Number of brochures provided throughout the year and website link traffic to digital versions.

Activity: Promote the Mid-Michigan Environmental Action Council (Mid-MEAC) volunteer stream monitoring efforts.

Corresponding topic area(s): C, J

Priority: Medium

Target audience: Public – recruiting volunteers for action.

Key message: Promote Mid-MEAC volunteer stream monitoring events that educate the public (volunteers) about macroinvertebrates and why they are an important indicator of water quality. This provides an opportunity to discuss pollutant sources and reporting of illicit discharges and riparian buffer purpose and management.

Delivery mechanism: GLRC Website and social media.

Year and frequency of implementation: Macroinvertebrate collections are done annually in the spring and fall, identification is completed in the fall.

Responsible party: GLRC Coordinator

Evaluation: Website traffic, potential volunteers reached through social media.

Activity: GLRC Educational Display

Corresponding topic area(s): B, C, D, E, F, G, H, I, J (all)

Priority: Medium

Target audience: Public and businesses

Key message: General watershed education; promoting action of the public about what they can do to reduce pollution.

Delivery mechanism: The display is used at the annual Quiet Water Symposium, annual Adopt-A-River event, Michigan Water Environment Association Watershed Summit, and various regional events. **The display is used at least annually within each community**

Year and frequency of implementation: Continuous use at annual events. Panels were updated in 2014 to relate more specifically to the minimum control measures and target audiences, and an additional scroll style banner was designed in 2018 to be used in members' municipal lobbies, libraries, and public spaces and created to address knowledge gaps identified by the 2012 public survey. Displays will be updated as needed in the future.

Responsible party: GLRC Coordinator, PEP Committee and **Waverly Community Schools**.

Evaluation: Number of events, use in municipal lobbies, event attendance.



Activity: Update basic educational graphic with tag line and GLRC website

Corresponding topic area(s): B, C, D, E, F, G, H, I, J (all)

Priority: Medium

Target audience: Public

Key message: The tag line was updated to read “Pollution Isn’t Pretty” and “We All Live In A Watershed”, demonstrating that what we put on land effects the water. The website is also listed which directs the public to information that covers all topic areas listed in this plan.

Delivery mechanism: Trail signage, brochures, social media, website content, events/**lobby displays**

Year and frequency of implementation: Ongoing

Responsible party: PEP Committee, GLRC Coordinator, Waverly Community Schools

Evaluation: Website link traffic, social media analytics, brochures handed out at events, event attendance.



Activity: Utilize existing news articles and update them to be more flexible with different media outlets (Twitter, shorter columns, etc.).

Corresponding topic area(s): B, C, D, E, F, G, H, I, J (all)

Priority: Medium

Target audience: Public, elected officials

Key message: Articles cover the following topics:

What is a Watershed?	Pet Waste and the Environment
Wetlands: An Overview	Storm Vs. Sanitary Sewer Systems
Who/What is the GLRC	Responsible Car Washing
Septic System Maintenance	Adopt Your Catch Basin
Safe Fertilizer Use	Illicit Discharge
Vehicle Maintenance	

Delivery mechanism: Articles are posted on the GLRC website, **community websites** and community newspapers. Similar educational content posted on social media.

Year and frequency of implementation: Continue to maintain articles on the GLRC website. Update/reformatting occurred in 2017. Educational content will be posted monthly on GLRC social media throughout the permit cycle. A posting timeline guide is also used.

Responsible party: GLRC Coordinator, PEP Committee and **Waverly Community Schools**

Evaluation: Number of articles (or similar) posted, including the number of residents receiving a publication **Waverly Community Schools**. The GLRC Coordinator tracks GLRC website and social media analytics

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

Activity: GLRC webpage titled “Stormwater Basics” and “What’s a Watershed?”

Corresponding topic area: A, C

Priority: High

Target audience: Public, elected officials

Key message: This section of the website promotes watershed health information, describes what citizens can do, how our water is impacted, etc.

Delivery mechanism: GLRC website and social media, community website links to the GLRC webpage

Year and frequency of implementation: Continuous presence on the website, update as appropriate.

Responsible party: GLRC Coordinator

Evaluation: Website link traffic, social media analytics

Activity: GLRC quarterly newsletters and annual report

Corresponding topic area(s): A, C, D, E, F, G, H, I, J (all)

Priority: High

Target audience: Public, elected officials

Key message: The newsletters and annual report provide information on specific GLRC activities/events related to the six minimum measures. It also provides information related to relevant partner events and activities. It serves to educate municipal staff, elected officials, and the public.

Delivery mechanism: GLRC website, social media, **community lobbies, email distribution**

Year and frequency of implementation: Ongoing, newsletters are completed quarterly, and the annual report is completed after the first of the calendar year.

Responsible party: GLRC Coordinator, **Email to District Staff**

Evaluation: Website link traffic, number of newsletters/annual reports distributed at events, number of people reached through email.

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

Activity: Maintain the GLRC and **community website** to include information on illicit discharges and contacts for reporting illicit discharges and acts of pollution.

Corresponding topic area: A

Priority: High

Target audience: Public

Key message: To report illicit discharges (description provided), illegal dumping, etc.

Delivery mechanism: GLRC website and social media, **permittee website**

Year and frequency of implementation: Continuous posting on GLRC website and social media and **Waverly Community School** website. As needed, the PEP committee will explore different delivery methods (language, etc.) to make this more relatable to the public.

Responsible party: GLRC Coordinator, PEP Committee, **Waverly Community School**

Evaluation: Website link traffic and social media analytics

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

Activity: Series of posters and brochures covering: car washing, pet waste, motor oil and fertilizer reduction.

Corresponding topic area(s): A, B, F, G

Priority: Medium

Target audience: Public

Key message: Posters and brochures describe the impact that bad practices related to car washing, pet waste disposal, motor oil disposal and fertilizer application can have on water quality. They also provide alternatives or best management practices for each of the four topics.

Delivery mechanism: Posters and brochures are available in community lobbies, brochures are handed out at public events, etc. Similar information is posted to the GLRC website and GLRC social media.

Year and frequency of implementation: Continuous use at public events (Adopt A River, Quiet Water Symposium, MWEA Watershed Summit and on website/social media, etc., update as appropriate.

Responsible party: GLRC Coordinator, PEP Committee and **Waverly Community Schools**.

Evaluation: Number of brochures provided throughout the year, website link traffic, and social media analytics

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

See corresponding topic area G below.

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

Activity: Promote existing materials related to grass clippings and leaf litter.

Corresponding topic area(s): A

Priority: Medium

Target audience: Public, small businesses

Key message: Use the best management practices for management of grass clippings and leaf litter.

Delivery mechanism: Promoted through the GLRC educational display. Posted to GLRC social media and website.

Year and frequency of implementation: 2013, continuous

Responsible party: GLRC Coordinator and **Waverly Community Schools**

Evaluation: Number of flyers/brochures handed out, website link traffic, social media analytics

Activity: Continue to maintain pet waste reduction watershed signage at parks or designated dog areas and post pet waste reduction information on social media and website

Corresponding topic area(s): A, D

Priority: Medium

Target audience: Public

Key message: Promoting pet waste reduction for watershed protection, connecting the public to their surrounding environment.

Delivery mechanism: Passing vehicles, people biking, walking or running, and pet owners will view the signs. Website and social media

Year and frequency of implementation: The signs will be maintained indefinitely with help from the local Road Commissions. Pet waste information will be present on mywatersheds.org indefinitely, with at least two GLRC social media posts per year. Waverly Community Schools inspects signage bi-annually

Responsible party: **Waverly Community Schools, GLRC Coordinator**

Evaluation: Signs posted, maintenance activities, website traffic, social media analytics



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

Activity: Promote local Household Hazardous Waste Collection and Recycling Events.

Corresponding topic area(s): D, E

Priority: Medium

Target audience: Public, small businesses

Key message: Pollution prevention by using available resources for appropriate disposal of waste.

Delivery mechanism: GLRC website and GLRC social media

Year and frequency of implementation: Continuous, updates as necessary and as events are scheduled.

Responsible party: GLRC coordinator

Evaluation: Website link traffic, social media analytics

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

Activity: Promote information on proper septic system care. Post Ingham County's local Point of Sale/Time of Sale septic/well inspection ordinance on GLRC website

Corresponding topic area: A

Priority: Low

Target audience: Public

Key message: Maintain your septic system; it could be contaminating local water bodies through stormwater runoff.

Delivery mechanism: GLRC website and social media.

Year and frequency of implementation: Continuous

Responsible party: GLRC coordinator

Evaluation: Website link traffic, social media analytics, brochures handed out.

(I) Educate the public on, and promote the benefits of, green infrastructure and Low Impact Development.

Activity: Promote Green Infrastructure and Low Impact Development brochure, update as appropriate.

Corresponding topic area: A

Priority: High

Target audience: Public, elected officials, small businesses

Key message: Promote the use of LID and Green Infrastructure (GI) as a tool for reducing polluted runoff from developments and homes. The brochure explains what LID and GI are and provides examples and resources (links).

Delivery mechanism: GLRC website, GLRC social media, use with GLRC educational display, lobbies, etc.

Year and frequency of implementation: Continuous, will use at events (Adopt A River, Quiet Water Symposium and MWEQ Watershed Summit) and update as appropriate.

Responsible party: GLRC Coordinator

Evaluation: Number of brochures handed out, website traffic, social media analytics

Activity: GLRC local Green Infrastructure projects webpage

Corresponding topic area: A

Priority: High

Target audience: Public, small businesses

Key message: The webpage highlights various local LID and GI projects in the region to help encourage others to pursue projects in their own neighborhood or community.

Delivery mechanism: GLRC website and social media

Year and frequency of implementation: Continuous, will update as needed, initial revision July 2013.

Responsible party: GLRC Coordinator

Evaluation: Website link traffic.

Activity: Green Infrastructure educational programming

Corresponding topic area: A

Priority: High

Target audience: GLRC members, elected officials, public

Key message: Educate public, members, and elected officials on several different best management practices (examples include: snow management, Green Infrastructure project highlights, Green Infrastructure monitoring results, pervious pathways and tree preservation techniques, etc.)

Delivery mechanism: GLRC website, social media, newsletter distribution, presentations

Year and frequency of implementation: Continuous presence of GI information on website and social media, GLRC to host two GI presentations per permit cycle.

Responsible party: GLRC Coordinator, PEP Committee

Evaluation: Number of people reached by email, website traffic, social media analytics. Attendance at programs.

Activity: Promote Greening Mid-Michigan (GMM) Project (regional GI vision) videos

Corresponding topic area: A

Priority: High

Target audience: Public

Key message: A 27-minute video was produced with WKAR, promoting Green Infrastructure techniques and demonstrating how they lead to improved land use, water resource management, etc. The GLRC also received 3-4 shorter sound bites specifically related to stormwater management.

Delivery mechanism: GLRC website, GLRC social media, video distribution.

Year and frequency of implementation: Video development occurred in 2013-2014. GLRC has and continues to post video segments to website, social media.

Responsible party: GLRC Coordinator

Evaluation: Number of video views, website traffic, social media analytics

(J) Identify and educate commercial, industrial, and institutional entities likely to contribute pollutants to stormwater runoff.

Activity: Educate business community on MS4 and pollution prevention. Will outreach to entities such as car wash facilities, lawn care companies, food establishments, and industrial and institutional entities to share information on how these operations can impact the MS4 or to partner with them in educating their customers.

Corresponding topic area(s): A

Priority: Medium

Target audience: Businesses, industries, institutions

Key message: Improve stormwater management to reduce pollution.

Delivery mechanism: Sharing educational materials with businesses, presentations to business groups, and/or utilizing business publications.

Year and frequency of implementation: The GLRC Coordinator will outreach to local businesses twice per permit cycle.

Responsible party: PEP Committee, GLRC Coordinator

Evaluation: Number of connections made with local businesses, etc.

Appendix “D”

WCS Inspection Field Worksheets & Stormwater Sampling and Analysis Protocol for School District MS4 Clients (SOP-101)

Structural BMP Table

Building:		
Inspectors:		

Client:		
Start Date:		
Inspection Type:		

[illegible]

Screening Inspection Log

Building:			Client:		
Inspectors:			Date:		
			Inspection Type:		

Structure Information:					
ID Number:		Structure Type		Lat:	
Type:		Location:			
Outfall Dimensions					
Observations:					

<u>Standing Water Characteristics</u> Standing Water: <input style="width: 100%;" type="text"/> Color: <input style="width: 100%;" type="text"/> Odor: <input style="width: 100%;" type="text"/> Suds: <input style="width: 100%;" type="text"/> Staining: <input style="width: 100%;" type="text"/> Oil Sheen: <input style="width: 100%;" type="text"/> Sewage: <input style="width: 100%;" type="text"/> Bacterial Sheen: <input style="width: 100%;" type="text"/> Algae: <input style="width: 100%;" type="text"/> Slimes: <input style="width: 100%;" type="text"/> Abnormal Growth: <input style="width: 100%;" type="text"/>	<u>Flow Characteristics</u> Flow Observed: <input style="width: 100%;" type="text"/> Source of Flow: <input style="width: 100%;" type="text"/> Velocity of Flow: <input style="width: 100%;" type="text"/> Color of Flow: <input style="width: 100%;" type="text"/> Flow Odor: <input style="width: 100%;" type="text"/>	<u>Maintenance</u> Cleaning: <input style="width: 100%;" type="text"/> Blockages: <input style="width: 100%;" type="text"/> Structural Issues: <input style="width: 100%;" type="text"/> Structural Trend: <input style="width: 100%;" type="text"/> Stenciling: <input style="width: 100%;" type="text"/>
<u>Additional Comments:</u>		

Sample ID And Information	Field Analysis:	Results:	Units:	Initials:	Photo ID:
Sample Collected?	pH:		pH units		
Round:	Temperature:		Celsius		
Last Rain Event:	Surfactants:		mg/L		
Current Weather:	Ammonia:		mg/L		
Screening Location Type:	Chlorine:		mg/L		
Other Screening Activities Conducted:	Turbidity:		NTU		
Outfall Characterization:	Conductivity:		uohm/cm		
Sample sent to Lab:					
Equipment Calibration:					
	Date:	Cal. By:			

Illicit Discharge Investigation Checklist

Building _____
 Client _____
 Date _____

Illicit Connection On Site? _____

Locations Inspected

Boiler Room

Floor Drains _____
 Sump Pump _____
 Slop Sinks _____
 Toilets _____
 Sinks _____
 Laundry _____
 Pool Discharge _____
 Other Drains _____
 Comments _____

Pool Room

Floor Drains _____
 Sump Pump _____
 Slop Sinks _____
 Toilets _____
 Sinks _____
 Laundry _____
 Pool Discharge _____
 Other Drains _____
 Comments _____

Bathrooms

Floor Drains _____
 Sump Pump _____
 Slop Sinks _____
 Toilets _____
 Sinks _____
 Laundry _____
 Pool Discharge _____
 Other Drains _____
 Comments _____

Other

Floor Drains _____
 Sump Pump _____
 Slop Sinks _____
 Toilets _____
 Sinks _____
 Laundry _____
 Pool Discharge _____
 Other Drains _____
 Comments _____

Custodial Area

Floor Drains _____
 Sump Pump _____
 Slop Sinks _____
 Toilets _____
 Sinks _____
 Laundry _____
 Pool Discharge _____
 Other Drains _____
 Comments _____

Other

Floor Drains _____
 Sump Pump _____
 Slop Sinks _____
 Toilets _____
 Sinks _____
 Laundry _____
 Pool Discharge _____
 Other Drains _____
 Comments _____

Stream Bank Inspection Table

Client:				Stream Name:		
Inspectors:				Site :		
				Date:		
Weather in the past 24 hours:				Current Weather:		
Field Analysis:						
Upstream Turbidity:		NTU	Upstream Temperature:		Upstream pH:	
Downstream Turbidity:		NTU	Downstream Temperature:		Downstream pH:	
Physical Characterization:						
<u>In-Stream Characteristics</u>			<u>Streambank & Channel Characteristics</u>			
Pools:	N/A		Depth of Run:			Stream Erodible Soils:
Runs:	N/A		Depth of Pool(s):			Bank Modifications:
Riffles:	N/A		Width of Stream:			Condition of Bank:
Stream Bed Features:			Stream Velocity:			Bank Slope:
% of Embedded Bottom:			Vegitative Cover:			
Organic Materials:			Shape of Channel:			
Large Wooded Debris:			<u>Additional Comments:</u> <div style="border: 1px solid black; height: 80px; width: 100%;"></div>			
Water Appearance:						
Water Odor:						
<u>Watershed / Biological Characteristics:</u>			<u>Stream Photos:</u>			
Wildlife Around Stream:						
Fish In Stream:						
Aquatic Plants in Stream:						
Extent of Alge :						
Potential Stream Impact:						

Storm Sewer Structure Operation Maintenance Waste Characterization Disposal Record

Building:

Client:

Address:

Inspectors:

Visual Observations

[illegible]

Stream Bank Inspection Table

Client:				Stream Name:		
Inspectors:				Site :		
				Date:		
Weather in the past 24 hours:				Current Weather:		
Field Analysis:						
Upstream Turbidity:		NTU	Upstream Temperature:		Upstream pH:	
Downstream Turbidity:		NTU	Downstream Temperature:		Downstream pH:	
Physical Characterization:						
<u>In-Stream Characteristics</u>			<u>Streambank & Channel Characteristics</u>			
Pools:	N/A		Depth of Run:			Stream Erodible Soils:
Runs:	N/A		Depth of Pool(s):			Bank Modifications:
Riffles:	N/A		Width of Stream:			Condition of Bank:
Stream Bed Features:			Stream Velocity:			Bank Slope:
% of Embedded Bottom:			Vegitative Cover:			
Organic Materials:			Shape of Channel:			
Large Wooded Debris:			<u>Additional Comments:</u> <div style="border: 1px solid black; height: 80px;"></div>			
Water Appearance:						
Water Odor:						
<u>Watershed / Biological Characteristics:</u>			<u>Stream Photos:</u>			
Wildlife Around Stream:						
Fish In Stream:						
Aquatic Plants in Stream:						
Extent of Alge :						
Potential Stream Impact:						

Detention BMP Inspection Checklist*

Project Location: _____

Date/Time: _____

Inspector: _____

Maintenance Item	Satisfactory/ Unsatisfactory	Recommended Inspection Frequency	Comments
Inlet/Outlet Pipes			
Structural integrity of inlet/outlet (Are any inlet pipes broken, crumbling, separated?) List Inlet Pipes Approximate Diameter and Type of Material Inlet Pipe 1 _____ Inlet Pipe 2 _____ Inlet Pipe 3 _____ Outlet Pipe Size/Type _____		A	
Riprap at inlet pipe (Is the riprap still present? Is it visible and not covered with sediment?)		A	
Stone around outlet pipe (Is the stone clogged with debris and/or sediment?)		A	
Trash or debris blocking inlet/outlet (Inspect to ensure no major obstructions hindering general functionality)		M	
Inspect/clean catch basin upstream of the BMP if accessible.		A	
Inspect inlets and outlet for erosion (Are there eroded areas around the pipes?)		A	
Inspect overflow spillway for signs of erosion.		A	
Pretreatment (if applicable) (Might include sediment forebay, upstream catch basin, bioswale, rain garden, swirl concentrator)			
Device functioning to trap/collect sediment		A	
Remove accumulated sediment as appropriate for the pretreatment device. forebay		A	
Detention Pond		A	

Inspection frequency key — A = Annual, M = Monthly, S = After major storm

*It is recommended to review and inspect the basin with the engineering as-built plans.

Maintenance Item	Satisfactory/ Unsatisfactory	Recommended Inspection Frequency	Comments
Inspect side slopes, berms and emergency overflow for erosion		A	
Reestablish permanent native vegetation on eroded slopes		As needed	
Inspect for excess sediment accumulation in pond if not pretreatment device is present		A	
Overall functionality			
Ensure pond is functioning properly (Professional Civil Engineer is recommended)		A	
Ensure the outlet is functioning properly (Professional Civil Engineer is recommended)		A	
Optional/Enhancements			
Maintain 15-20 feet “no mow and chemical free” zone		A	
Mow (or burn) the “no mow” zone		A	
Inspect basin and “no mow” zone for invasive species.		A	
Qualified professional applicator selectively herbicide invasive species		A	
Increase plant diversity by planting additional vegetation in and around pond.		A	
Complaints from residents (note on back)		S	
Encroachment on pond/no- mow zone.		A	
Unauthorized plantings		A	
Aesthetics (e.g., graffiti, unkept maintenance)		A	

Inspection frequency key — A = Annual, M = Monthly, S = After major storm

*It is recommended to review and inspect the basin with the engineering as-built plans.

Summary

Inspector's remarks: _____

Overall condition of facility (acceptable or unacceptable): Acceptable

Dates any maintenance must be completed by: _____

Inspection frequency key — A = Annual, M = Monthly, S = After major storm

*It is recommended to review and inspect the basin with the engineering as-built plans.

ARCH ENVIRONMENTAL GROUP, INC.



STORMWATER SAMPLING AND ANALYSIS PROTOCOL FOR SCHOOL DISTRICT MS4 CLIENTS (SOP-101)

Updated By:

Ms. Christine Caddick,
cleanWATER Division
Certified Industrial Site Stormwater Operator No. I-11934
Arch Environmental Group, Inc.
37720 Interchange Drive
Farmington Hills, Michigan 48335



Table of Contents

<u>Section</u>	<u>Page</u>
1.0 Summary	1
2.0 Background	1
3.0 Objectives and Needs	1
4.0 Quality Considerations	2
5.0 Dry Weather Screening (DWS) Sampling and Analytical Methods	4
6.0 Wet Weather Monitoring (WWM) Sampling and Analytical Methods	10
7.0 Additional QA/QC Methods	15
 <u>Appendices</u>	
Appendix A Stormwater Test Method Specifications	18
Appendix B Instructions for Completing Chain of Custody Form	22
Appendix C Laboratory Sample Acceptance Policy	27

1.0 Summary Statement

Arch Environmental Group, Inc. (AEG) has developed and implemented this protocol (i.e., Standard Operating Procedure – “SOP-101”) which includes quality provisions for completing stormwater sampling for School District Municipal Separate Storm Sewer System (MS4) clients in Michigan.

2.0 Background

Public school districts in urbanized areas are required under the federal National Pollution Discharge Elimination System (NPDES) “Phase II” regulations, implemented in Michigan by the Michigan Department of Environmental Quality (MDEQ), to obtain permit coverage for storm water discharges. The permit coverage is based on the individual district client circumstances. In some cases, permit coverage for a school district may be authorized or “nested” under a local government (city, village, township or county) MS4. In either case, specific requirements must be followed. The requirements are based on the specific NPDES MS4 permits and the associated Certificate of Coverage (COC) issued to the school district by the MDEQ. The school district may be covered under a NPDES permit which includes a Stormwater Management Program plan (SWMP) or a Stormwater Pollution Prevention Initiative plan (SWPPI). The plan defines the method and programs the permittee shall follow to ensure permit compliance, including storm water sampling requirements. The specific COC may also define additional requirements (i.e., Total Maximum Daily Loads – “TMDL’s”) for the school district based on the geographic location of the school district’s facilities and the receiving surface waters of the State.

The NPDES MS4 permit and COC conditions covered in the SWMP or the SWPPI plans may require sampling during dry weather screening (DWS) and wet weather monitoring (WWM) activities at applicable discharge points/outfalls at individual school district properties. Dry weather sampling as defined by the MDEQ is sampling at least 48 hours after a precipitation event, including snow melt. Typically, no water flow would be present at a discharge point/outfall after this period of time following a precipitation event. Water flow in dry weather may indicate that a substance other than stormwater is present in the stormwater system. DWS activities include sampling of any observed dry weather flows at every discharge point/outfall throughout the school district, primarily in effort to identify potential illicit discharges. Depending on the results of the DWS sampling, AEG and the school district may be required to perform additional and follow up illicit discharge investigations. Wet weather monitoring (WWM) sampling is required to demonstrate compliance with district assigned TMDL’s and post-construction run-off requirements for total suspended solids (TSS). The specific sampling and analytical test methods utilized for DWS and WWM are described in Sections 5.0 and 6.0 respectively.

3.0 Objectives and Needs

AEG developed and implemented the standardized protocol (SOP-101) for completing the required DWS and WWM stormwater sampling for school district MS4 clients in Michigan. AEG utilizes similar

protocols for other stormwater clients, with minor modifications based on applicable permit requirements, TMDL's and sampling parameters. The principal objective of this protocol is to provide quality data to demonstrate stormwater permit compliance as outlined in the SWMP or SWPPI for the school district MS4 clients in a timely and cost-effective manner. Sampling methods and target indicator parameters for this protocol have been optimized for school district clients. The results of the sampling are used by the client for: 1) identifying and remediating illicit discharges and connections (part of the permit's Illicit Discharge Elimination Program – "IDEP"); 2) demonstrating compliance with TMDL's, post-construction TSS limit, and other surface water quality standards; and 3) for developing improvements in facility operations and stormwater structural controls (BMP's).

This AEG protocol is based on the specific NPDES MS4 permit requirements, MDEQ recommendations, and industry-accepted stormwater sampling and analytical procedures. This protocol also incorporates key elements of quality systems for environmental monitoring projects utilized by the United States Environmental Protection Agency (EPA), MDEQ, and other governmental and non-governmental organizations. This protocol was developed to ensure that the sample collected and analyzed, the management of the data, and the report provided to the clients, are of sufficient quality to meet the identified current project objective and needs.

4.0 Quality Considerations

In order to ensure the data is of sufficient quality for the project objective and needs, AEG first investigated the requirements for the National Pollutant Discharge Elimination System Permit. The following requirements were identified:

- 1) Samples and measurements shall be representative of the volume and nature of the monitored discharge or water body.
- 2) Analytical procedures shall conform to 40 CFR 136, unless otherwise specified in the permit, or an alternate test procedure (ATP) is approved by the MDEQ.
- 3) The laboratory analyzing the samples shall periodically calibrate and perform maintenance on instrumentation at regular intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the laboratory's quality assurance (QA) / quality control (QC) program.
- 4) Use of commercially available field test kits and similar equipment (portable electronic sensors) is allowed for screening and analysis of dry-weather flow, provided the calibration and maintenance provisions in 3) are followed.

The MDEQ has provided limited recommendations regarding qualitative considerations when performing MS4 stormwater sampling and analysis. Refer to the DWS and WWM sampling and analysis sections for further discussion of MDEQ recommendations.

Next, AEG investigated the quality systems required for environmental monitoring projects performed for and funded by the EPA and the MDEQ. The EPA requires that recipients of EPA funding for work involving environmental data shall comply with American National Standards Institute (ANSI) ASQC E4-1994 “Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs”.¹ To demonstrate conformance to the standard, the EPA requires two forms of documentation:

- 1) Documentation of the organization’s quality system (referred to as a Quality Management Plan “QMP”), and
- 2) Documentation of the application of QA/QC activities to a project-specific effort (referred to as a Quality Assurance Project Plan “QAPP”).²

For small grants and contracts, the EPA may allow the QMP & QAPP to be combined into a single document. Further, the EPA allows a “graded approach”, which means the level of effort and detail expended to develop and document quality measures shall be based on the nature of the work being performed and the intended use of the data.

In recognizing the value that volunteer organizations can offer in collecting environmental data, as well as potential problems involving data credibility from these organizations, the EPA published “The Volunteer Monitor’s Guide to Quality Assurance Project Plans”, EPA 841-B-96-003, September 1996.³ This document recommends that volunteer organizations performing environmental monitoring develop a QAPP, especially if the data might be used by state, federal, or local resource managers.

Similar to the EPA program, the MDEQ requires that MDEQ staff and recipients of MDEQ funding for work involving environmental data shall comply with Water Bureau Policy and Procedures # WB-008, “Quality Assurance Planning for Environmental Data Collection”, May 2007. This policy, which essentially duplicates the EPA quality requirements identified above, requires the formation and approval of a QAPP prior to the start of environmental data collection for MDEQ funded projects.

In June, 2010, the MDEQ published “Wet Weather Pollution in Michigan”, Report No. MI/DNRE/WB-10/020, that includes in *Appendix A*, TMDL sampling guidance for MS4’s and which states that, although not required, preparation of a QAPP “...is always a good idea prior to sample collection...”⁴ However, the MDEQ also states that “this guidance may present logistic and budgetary challenges if fully implemented”, and “it is recognized that a final monitoring program will have to balance the need for accurate and representative data with available resources, and that reduced efforts may be necessary.”

¹ <http://www.epa.gov/QUALITY/faq9.html>

² <http://www.epa.gov/QUALITY/faq6.html>

³ <http://water.epa.gov/type/rsl/monitoring/gappcovr.cfm>

⁴ http://michigan.gov/documents/deq/wb-spotlight-wetweather_323733_7.pdf

At a minimum, this MDEQ guidance recommends that MS4's develop and follow QA/QC procedures to ensure stormwater samples are collected, preserved, and analyzed properly.

AEG believes that this protocol (SOP-100) developed for stormwater sampling and analysis for school district MS4 clients, while not required to comply with the EPA and MDEQ quality provisions identified above, is consistent with the EPA and MDEQ approach. This protocol incorporates key elements and recommendations of the EPA and MDEQ programs to ensure that the storm water monitoring data is representative of the discharges and of sufficient quality to meet the identified current project objective and needs. Additional QA/QC steps included in this protocol are listed in a later section.

5.0 Dry Weather Screening (DWS) Sampling and Analytical Methods

In accordance with the IDEP requirements of the NPDES MS4 permits, MS4's shall conduct DWS at a minimum of once every five years activities at each discharge point/outfall. Additional sampling may be necessary to investigate potential illicit discharges up to and including upstream of the discharge point/outfall, and confirming or investigating suspect results. AEG collects and maintains records and sample data of all discharge points/outfalls for each school district MS4 client for individual school buildings located on a common district property. Each discharge point and outfall is assigned a unique identifying description (ex: MES-02.OP.OF) based on the site map of the stormwater drainage system completed for each specific school district facility. DWS screening and sampling will only be conducted at upstream locations if dry weather flow is identified at the district property discharge point/outfall. Use of tracer dyes and other aspects of the IDEP investigations are not addressed in this sampling and analysis protocol.

The methods developed to conduct the DWS sampling and analysis of observed flows are based on the NPDES MS4 general permit requirements, and incorporate industry-accepted procedures from the following external reference sources. Field staff shall refer to these cited reference documents for questions related to: where samples should be collected; how to collect representative samples; avoiding stagnant water and touching the sides/bottom of structures, and unique methods such as constructing temporary weirs for sampling shallow flows.

- 1) "Michigan Municipal Separate Storm Sewer System (MS4) Permit – Illicit Discharge Elimination Plan/Program", Water Bureau Compliance Assistance document, MDNRE, rev. August 2010.
- 2) Brown, E., Caraco, D., and Pitt, R. 2004. *Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment*, Center for Watershed Protection and University of Alabama. EPA X-82907801-0. EPA Office of Wastewater Management, Washington, D.C.
- 3) "NPDES Stormwater Sampling Guidance Document", EPA 833-B-92-001, July 1992;
- 4) "Industrial Stormwater Monitoring and Sampling Guide – Final Draft", EPA 832-B-09-003, March 2009;

- 5) "How to do Stormwater Sampling – A guide for industrial facilities", Washington State Department of Ecology, Publication #02-10-071, rev. March 2010;
- 6) "Guidance Manual: Stormwater Quality Monitoring Protocols", CTSW-RT-03-109.51.42, California Department of Transportation, July 2000;
- 7) "Illicit Discharge Elimination Program (IDEP) Compliance Assistance Document", Michigan Department of Environmental Quality, Water Resources Division, September 2014.

AEG field staff use local weather reports or data from internet weather websites (i.e., NOAA, etc.) to confirm that no precipitation event (including snow melt and other similar factors) has occurred within a minimum of 48 hours prior to starting any DWS investigations or collecting any DWS samples. Weather data is recorded on the standardized field inspection forms. Unless otherwise approved by management, DWS and sampling is conducted with two field personnel for safety, logistical, and quality reasons. Field staff shall follow the company Health and Safety Plan (HASP) for all activities. For sampling, staff is required to use standard Level D protective wear, powder-free nitrile gloves, and safety glasses.

All sampling equipment is prepared and/or assembled in the shop. Portable electronic sensors (probes for field screening analyses) are calibrated according to internal QA/QC procedures. In accordance with published guidelines and manufactures recommendation, at a minimum, pH, turbidity, and conductivity probes are calibrated monthly during periods of use to ensure accurate and consistent results.⁵ For special investigations requiring additionally documentation of meter accuracy, AEG may confirm calibration of the pH probes in the shop twice each sampling day (once in the morning prior to use and once in the evening at the end of sampling). Refer to section 7.0 Additional QA/QC Methods for additional information. A checklist is utilized to make sure all necessary items are ready for each sampling event, including sampling equipment, sample bottles, safety equipment, and test kit components. The use of a checklist minimizes unproductive return trips to the shop.

Based on the test procedures selected, AEG receives pre-assembled kits in plastic zip-lock bags of the required sample bottles, complete with preservatives, from an external third party laboratory. For quality purposes, pre-assembled kits are ordered on a just-in-time basis. In no case are sample bottles with preservatives stored for greater than six (6) months. All sample bottles are new and clean for each event. Sample bottles for bacteria (total coliform and E. coli) analyses are provided by the laboratory in a sterilized and sealed condition. A cooler with ice and thermometer ensures that samples are preserved in the prescribed manner for delivery to the external laboratory.

Appendix A contains a table which identifies the test method, container, preservative, hold time, and minimum reporting limits for each test procedure utilized. Sample information and requested analytical tests are recorded on a standardized chain of custody form, which ensures samples are delivered to and

⁵ <http://stormwaterbook.safl.umn.edu/content/situ-site-and-grab-and-automatic-sampling>

received by the laboratory within required specifications. Where required and/or safe to do so, sample bottles are completely filled (i.e., convex meniscus) leaving no head space to minimize potential degradation of the sample prior to testing. Where required, and as a general rule, sample containers are kept on ice in the cooler at ~4°C for delivery to the laboratory. Appendix B contains instructions for field staff in filling the sample bottles and completing the Chain of Custody form. Appendix C contains the laboratory acceptance criteria to ensure that the stormwater samples are received in a manner consistent with the specified test methods and as part of the laboratory's internal QA/QC program. Samples are either qualified or rejected by the laboratory if they do not meet the identified acceptance criteria.

For observed dry weather flows at stormwater outfalls or discharge points, Protocol SOP-101 includes field screening in addition to visual inspection. Refer to Figure 1 for the DWS decision-making flowchart.

In accordance with the NPDES MS4 permit conditions, discharge points/outfalls are visually inspected for: presence or absence of water flow, unusual vegetative growth, staining, undocumented connections, and structural integrity. If standing or flowing water is present, the flow is inspected for: water clarity, color, and odor; the presence of suds, oil sheens, sewage, floatable materials, bacterial sheens, algae, and slimes; staining and unusual vegetative growth. All field observations are recorded on a standardized inspection form, and a photograph is taken of the outfall/discharge point as well as the observed flow (if present).

If water flow is observed, an onsite source investigation shall be conducted to determine the origin of the flow. The initial source investigation includes visual and olfactory observations upstream from the outfall/discharge point. If necessary, relevant indicator field screening, video camera inspection and/or dye tracing will be conducted.

If dry weather flow is observed and the source is not identified during the source investigation; a grab sample is collected for indicator field screening analysis. The grab sample is collected for analysis in accordance with permit requirements. All grab samples are collected using industry-standard equipment and using the methods and techniques described in the cited reference documents (see pages 4-5). Samples are collected only from the center of flow discharges and not from stagnant water. Careful attention is placed on not contacting or disturbing the sides and/or bottoms of structures while collecting the sample. The field staff uses a clean-hands/dirty-hands approach, such as the person handling the sample containers maintains clean hands, while the other team member performs operations such as opening manhole lids.

Next a field screening process is performed to assess the dry weather flow. The field screening includes seven (7) indicator parameters. The selected indicator parameters are:

- 1) temperature;

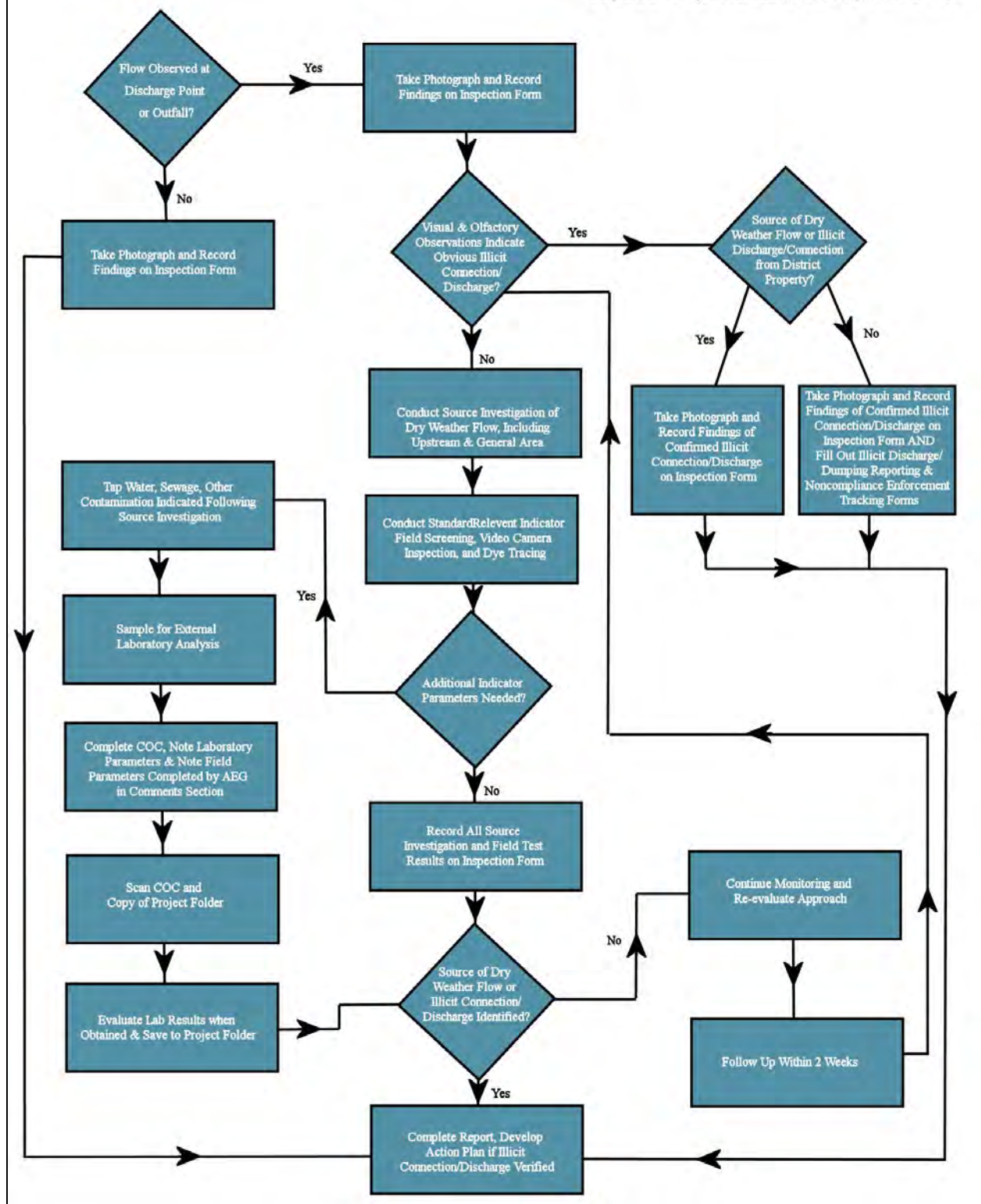
- 2) pH;
- 3) detergents (i.e., surfactants);
- 4) chlorine;
- 5) ammonia (NH₃-N);
- 6) turbidity; or
- 7) conductivity.

Indicator parameters used to assess the dry weather flow shall be determined by the visual and olfactory observations and source investigation. The pH and temperature measurements are made in-situ or as soon as possible after collecting the grab sample. If the pH and temperature measurements cannot be made within 15 minutes, another grab samples shall be collected. Sample collection instruments and test probes are rinsed with distilled water and triple rinsed with the water flow to be sampled prior to collection at each location. In accordance with published guidelines and manufactures recommendation, at a minimum, pH probes are calibrated monthly during periods of use to ensure accurate and consistent results.⁶ For special investigations requiring additional documentation of meter accuracy, AEG may confirm calibration of the pH probes in the shop twice each sampling day (once in the morning prior to use and once in the evening at the end of sampling). The latest meter calibration date is documented on the field inspection forms, along with the results obtained for the seven (7) indicator parameters. Grab samples collected for analysis by field test kits are also noted on the Chain of Custody form without requesting external laboratory analysis. Refer to Appendix B. After use, the field test kits and portable meters are stored in accordance with the manufacturer's instructions.

Additional grab samples will be collected and delivered for external laboratory analysis only if additional test parameters are required for the source investigation. The laboratory analysis parameters for grab samples are determined by the type of contamination suspected at the time of the source investigation. Refer to Figure 1 for a DWS decision-making flowchart.

⁶ <http://stormwaterbook.safl.umn.edu/content/situ-site-and-grab-and-automatic-sampling>

Figure 1 - Dry Weather Screening Flow Chart



Laboratory indicator parameters are based on MDEQ guidance and as specified in the reference sources identified above. The selected laboratory parameters are:

- 1) Fluoride;
- 2) Coliform;
- 3) E-coli;
- 4) Potassium;
- 5) Color; and
- 6) Ammonia.

The grab samples are transferred from the sampling device into the pre-prepared sample bottles in conformance with the cited reference sources and instructions in Appendices A-C for delivery to the external laboratory within allotted hold times and conditions. The laboratory records the temperature of the samples on the chain of custody form upon receipt. As noted above, the table in Appendix A lists sample containers, preservatives, hold times, test methods, and minimum reporting limits utilized as part of this protocol.

Once the laboratory analysis results are received, the results are interpreted using the Flow Chart Method described in reference source # 2 listed on Page 4. The Flow Chart Method is based on evaluating different indicator parameters in an effort to identify the potential source(s) of flow in dry weather.

The results from the DWS field tests and external laboratory analyses are recorded in a table “SW Outfall Sampling Log” maintained on behalf of the client by AEG. The table identifies the school district MS4, building, and unique outfall identifier descriptions. If any of the indicator parameters are outside of permit levels or published benchmark standards for stormwater, then AEG initiates further source investigation. The investigations typically involve additional DWS sampling at stormwater structures and/or outfalls upstream of the original discharge point/outfall.

If an illicit connection or discharge is identified during the source investigation, originating from non-district personnel or property, AEG will notify the appropriate district staff and note source information on the “SW Outfall Sampling Log”. Additionally, AEG shall complete the following documentation:

- District Illicit Discharge Dumping and Reporting Form (if available)
- District Noncompliance Enforcement Tracking Form (if available)

If the illicit connection/discharge is identified to be originating from district personnel or property, AEG will notify the appropriate district staff and note source information on the “SW Outfall Sampling Log”.

6.0 Wet Weather Monitoring (WWM) Sampling and Analytical Methods

The methods utilized for WWM sampling and analyses are similar to those described above for DWS investigations. The primary difference is that the activity is done during wet weather events to collect grab samples of “representative” flows. The primary purpose of WWM is to demonstrate compliance with applicable TMDL’s or post-construction run-off requirements for TSS. For WWM, field screening tests are performed only for temperature and pH. Additional grab samples are collected by AEG field staff, at the same time as the field screening grab samples, for field analysis and by the external laboratory. The grab sample is analyzed using a field test kit and portable electronic probes for seven (7) indicator parameters: temperature, pH, detergents (i.e., surfactants), chlorine, ammonia (NH₃-N), turbidity and conductivity. Additional indicator parameters are analyzed for fluoride, coliform, E-coli, potassium, color and ammonia by the external laboratory, along with the regulated TMDL parameter(s) and/or TSS, as applicable. The applicable TMDL parameters are identified in the COC and are based on the MS4 receiving surface waters. TMDL’s for the MS4 as currently identified are as follows: Dissolved Oxygen, E. coli, Phosphorus, and Sedimentation/Biota.

TMDL Sampling

For TMDL compliance, at least one “representative” sample of a stormwater discharge is required from at least 50% of the discharge points. Sampling at other outfalls/discharge points may also be performed as defined in the SWMP or SWPPI plans. The purpose of the sampling is to demonstrate the effectiveness of structural and non-structural controls (i.e., Best Management Practices – “BMP’s”) and for compliance with applicable permit limits (i.e., TMDL’s).

Sampling at discharge points:

- 1) The sample will be from the stormwater, at or before the discharge point, not ambient waters after the discharge mixes with the water body.
- 2) The focus area is within, or contributing to, the listed TMDL reach. The municipality’s jurisdiction may include land and discharge points upstream of this area. In this case, sampling of discharge points upstream of the TMDL reach should be included.

What constitutes a “representative” WWM sample is not defined in the permits. However, MDEQ and other guidance documents recommend that:

- 1) There be between 0.25” – 1.5” of rain within a twenty-four (24) hour period;
- 2) Sampling be conducted as soon as possible following the start of discharge to capture a sample of the “first flush”;
- 3) Sampling be completed within the first 12 hours of the stormwater discharge event; and
- 4) WWM sampling should only occur following a dry period of 72 hours or more.^{7 8}

⁷ http://michigan.gov/documents/deq/wb-sw-ms4-TMDL_sampling_305960_7.pdf

For TMDL compliance, sample of a stormwater discharge should be conducted:

- 1) Between May 1 and October 31 due to the difficulties with cold-weather sampling.
- 2) Sampling wet weather should occur only after it has been dry for at least 72 hours.
- 3) Very small storm events may not generate significant runoff. Therefore, sampling should not occur until there has been at least ¼ inch of rain within a 24 hour period. There will be times when a suitable event has been forecast, causing monitoring efforts to begin, only to have to cancel due to insufficient precipitation.
- 4) Sampling should be conducted as soon as possible following the start of discharge from targeted discharge points to capture a sample of the 'first flush'. First flush is defined as the runoff discharge at the beginning of a storm event and is assumed to consist of a significant amount of pollutants.
- 5) Synchronized sampling should be done as often as possible. Synchronized sampling is when several discharge points are sampled at or near the same time. If enough trained staff are available, all sites should be sampled during the same time period.

The results from the WWM field tests and external laboratory analyses are entered into the Excel spreadsheet for the MS4 in the same manner as done for DWS results. Further sampling is performed only if initial results are elevated or otherwise suspect.

In addition to the general quality provisions identified in the above sections, this protocol (SOP-101) for stormwater sampling and analysis includes the following QA/QC steps to ensure that the stormwater monitoring data is representative of the discharges and of sufficient quality to meet the identified current project objective and needs:

⁸ <http://www.ecy.wa.gov/pubs/0210071.pdf>

**Total Maximum
Daily Load (TMDL)**

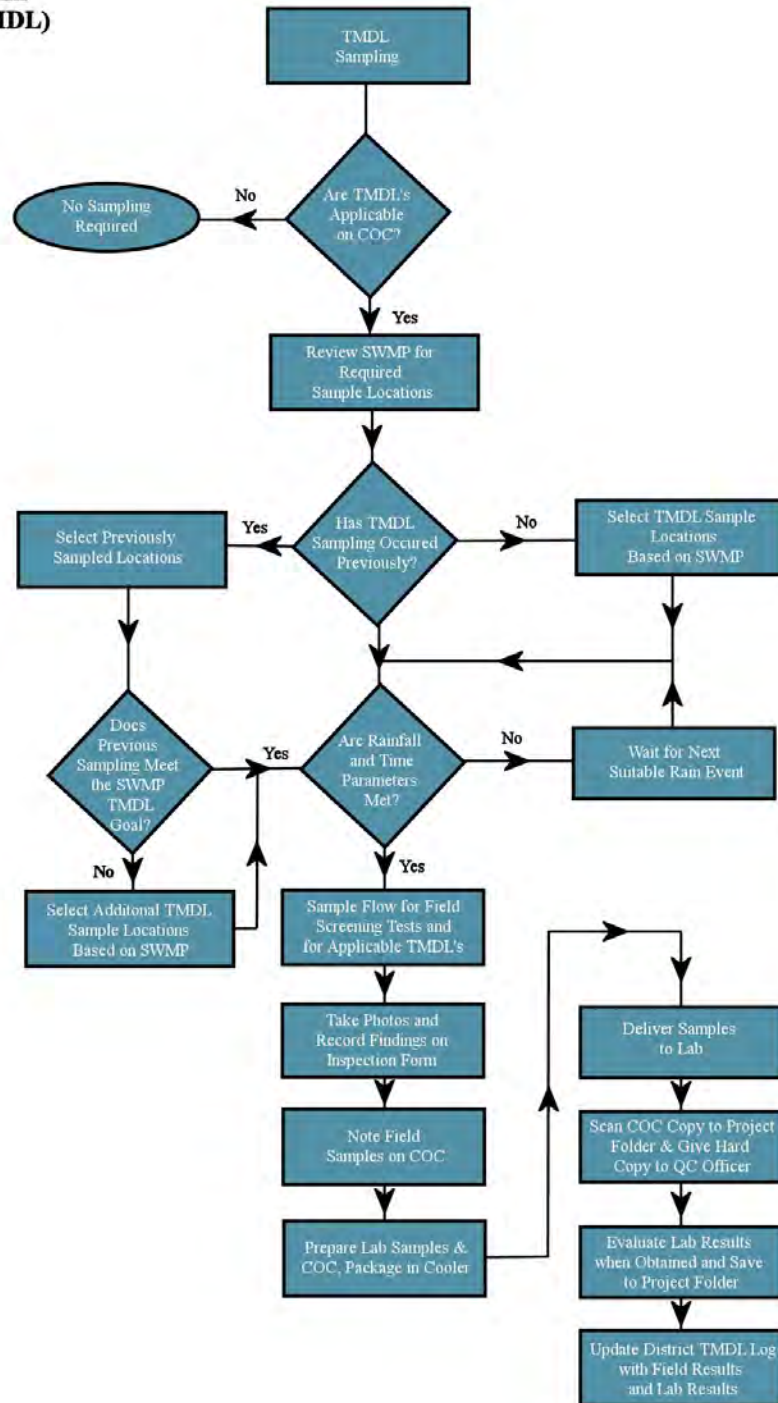


Figure 2 - Wet Weather Monitoring Flowchart

Construction & Post Construction Sampling

As noted above, sampling during wet weather may also be required to demonstrate compliance with the post-construction stormwater runoff requirements for total suspended solids (TSS). Post-construction sampling is only required for new and redeveloped projects that disturb one (1) acre or more (ex: a new parking lot).

WWM Construction & Post Construction sampling for total suspended solids shall be conducted for the following:

- 1) A rain event results in a sediment discharge from a construction site that meets the following:
 - a. Greater than 1 acre in size;
 - b. Within five hundred (500) feet of an EPA/MDEQ identified waterbody or wetland, and/or;
- 2) A construction site that is required by the permitting agency to monitor and regulate stormwater discharges.

In addition to the sampling, a Soil Erosion and Sediment Control inspection shall be conducted by a state certified SESC inspector. The inspection shall include corrections and recommendations as required by the SESC regulations.

Total Suspended Solid (TSS)

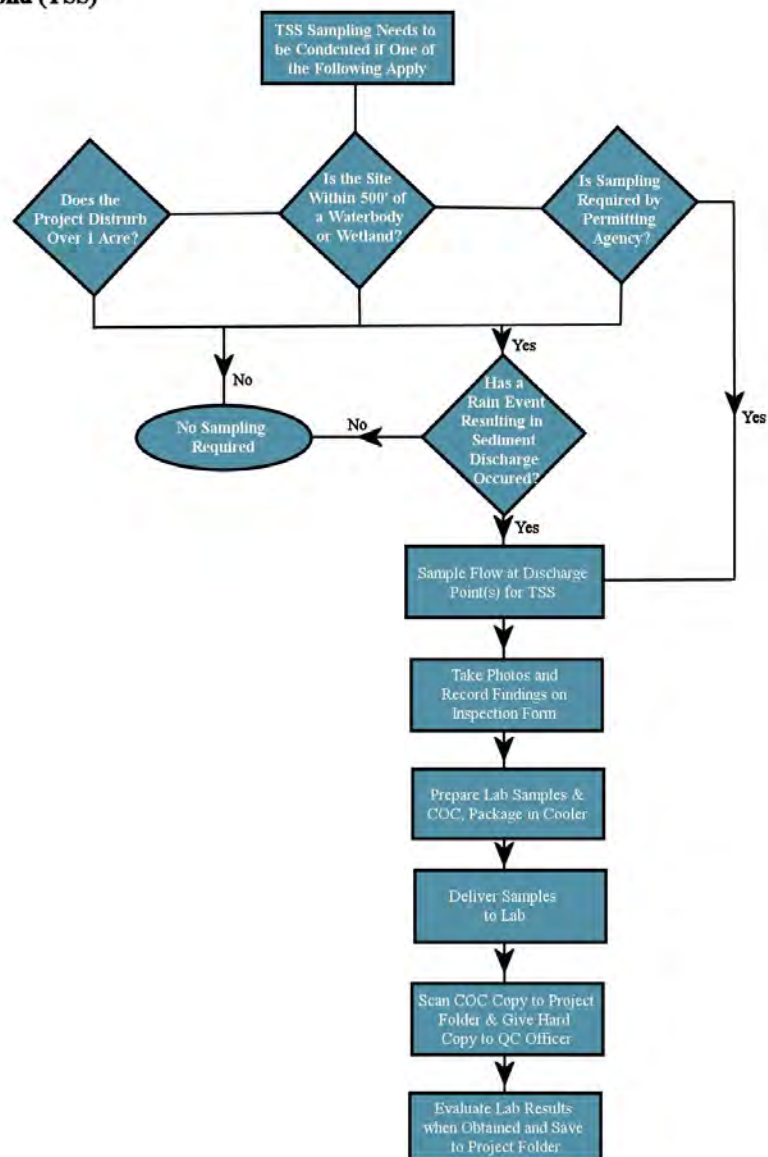


Figure 3 - Construction & Post Construction Sampling

7.0 Additional QA/QC Methods:

In addition to the general quality provisions identified in the above sections, this protocol (SOP-101) for stormwater sampling and analysis includes the following QA/QC steps to ensure that the stormwater monitoring data is representative of the discharges and of sufficient quality to meet the identified current project objective and needs:

Quality Assurance:

- Training
 - Field staff shall be stormwater operators certified by the MDEQ.
 - Field staff shall receive annual refresher training on this protocol, including:
 - proper stormwater sampling techniques and sample handling;
 - proper equipment operation, calibration, maintenance, cleaning & storage;
 - proper handling & storage of test kit reagents, DI water, & calibration fluids; and
 - identified quality assurance and quality control procedures.
 - Field staff shall receive annual HAZWOPER refresher training to ensure that all activities are performed in a safe manner (refer to HASP), including:
 - working in teams of two, unless authorized by management;
 - wearing proper personal protective equipment (PPE);
 - NOT entering confined spaces;
 - ensuring that all waste materials are properly managed, and
 - knowing what to do in case of an accident or emergency situation.
 - Management shall maintain staff training records, and make available upon request by clients and/or applicable government agencies (i.e., MDEQ).
- Equipment management, calibration, frequency, and documentation
 - Field staff shall inspect, maintain, and clean sample equipment and store items in a manner to prevent damage and contamination in accordance with the manufacturer's instructions and EPA guidance.^{9,10}
 - Field staff shall calibrate pH meters (and other electronic probes, as applicable), monthly during periods of use, and report any problems to the QC Officer.¹¹ Staff shall follow written calibration procedures. Calibration dates and staff initials shall be recorded in a log maintained with the instrument or in a designated file cabinet.
 - Prior to sampling, field staff shall verify that the pH meter has been calibrated within the prior month and then enter the latest calibration date on the field inspection forms.

⁹ http://www.epa.gov/epawaste/hazard/testmethods/faq/faqs_sampl.htm

¹⁰ <http://www.epa.gov/region4/sesd/fbgstp/Field-Equipment-Cleaning-and-Decontamination.pdf>

¹¹ <http://stormwaterbook.safl.umn.edu/content/situ-site-and-grab-and-automatic-sampling>

- Sample bottles shall be new and provided by the contracted laboratory in kits (sealed in zip-lock plastic bags) based on the tests to be performed, including any required preservatives. The date of receipt shall be noted on the plastic bag. Sample kits with bottles containing preservatives shall not be used if over six (6) months old.
- Sample kits with bottles containing preservatives, DI water, calibration solutions, and field test kit reagents shall be dated and stored in a manner to prevent deterioration (i.e., lids securely closed, dry location, and room temperature).
- DI water shall be replenished as needed, but in no case shall be used after being opened and stored for over six (6) months.
- Chemical solutions and chemical reagents for field test kits shall be replaced on an as needed basis, and replaced at least annually once containers have been opened and used.
- Sample collection and analysis
 - All stormwater sampling shall be done in teams of two for safety reasons and to cross-check work, unless an exception is authorized by management. A clean-hands/dirty-hands technique shall be used by the field team to prevent contamination of samples.
 - Field staff shall properly complete the Chain of Custody form, in accordance with the procedures in Appendix B, for all collected samples (both analyzed by field test kits and delivered to the external laboratory).
 - Field staff shall identify on the Chain of Custody form any issues or exceptions that occurred when collecting samples.

Quality Control:

- Internal Quality Control
 - Equipment Quality Control
 - Field staff shall inspect equipment prior to use in order to ensure it is clean, in working order, and not damaged.
 - Field staff shall clean and inspect all equipment after use.
 - Field staff shall check the dates on all sample bottle kits, field test kit reagents, calibration fluids, and DI water containers prior to use to verify they are within the acceptable time limits as noted above.
 - Field Procedures Quality Control
 - Field staff shall check all Chain of Custody forms for proper completion before submitting with samples to the external laboratory
 - Data Analysis Quality Control
 - Staff shall check all manual calculations twice.
 - For automatic calculations (ex: iPad tables, Excel files, etc.), staff shall confirm all program formulas are correct prior to use.
 - For field data entry and management using electronic devices (ex: iPad), approximately 10% of entered data shall be double-checked by the field team partner for accuracy.

- Prior to finalization, staff shall inspect all documents containing data for errors by comparing to original field notes, laboratory reports, etc.
 - The QC Officer or designee shall review all internal QC sample results on a quarterly basis, and provide management with a summary of findings.
 - All reports containing monitoring data and/or recommendations to be sent to the client or outside organizations shall first receive a quality review by the QC Office or Project Manager.
- External Quality Control
 - Laboratory Sample Quality Control
 - The contracted laboratory shall comply with the identified requirements of the NPDES MS4 general permits. Refer to Section 4.0 on Page 2, and Appendix A.
 - Follow an internal QA/QC program
 - Maintain and calibrate equipment to ensure accuracy
 - Use the EPA test procedures in 40 CFR 136 or approved alternate procedure.
 - The laboratory shall notify the client in writing of any test results which do not conform by the QC Officer.
 - Staff shall examine the completed Chain of Custody form returned from the laboratory with each sample result to check for any noted discrepancies. Discrepancies shall be reviewed with management prior to utilizing or reporting the analytical data.
 - QC Officer or designee shall review the external laboratory's QA/QC program every three years for conformance with internal procedures and test method specifications, and provided management with a summary of findings.

APPENDIX A

APPENDIX A**STORMWATER TEST METHOD SPECIFICATIONS**

Field Screening Tests DWS/IDEP (Grab Sample)											
Parameter	Methodology	EPA 30 CFR, 136 Approved Method [a]	Current or Alternate Procedure [b]	Container Type & Size [c]	Chemical Preservative	Holding Temperature °C	Holding Time [d]	Approx. Reporting Range [e]	Approx. Resolution or LRL	Units	Approx. Accuracy
pH	electrometric; ion-selective electrode	SM 4500-H+ B	EPA 150.1; [f]	P, FP, G; 50 mL	none; no headspace	4°C if transported; test is time / temperature sensitive	ASAP; <15 min	0-14	1	pH	+/- 0.1
Temperature	thermometric	SM 2550 B	[f]	P, FP, G; 50 mL	none	at test temperature	ASAP	0-40 °C	0.1	°C	+/- 0.2
Surfactants (aka Detergents)	colorimetric; Hach Test Kit (Toluidine Blue-O)	SM 5540 C	EPA 425.1; [f]	P, FP, G; 100 mL	none; no headspace	4°C if transported	ASAP; <48 hrs	0-1.3 mg/L	0.05	mg/L	+/- 0.1
Ammonia (NH ₃ -N)	colorimetric; Hach Test Kit (Salicylate)	SM 4500-NH ₃ C	EPA 350.3; [f]	P, FP, G; 500 mL	no headspace, H ₂ SO ₄ pH<2 [g]	4°C	ASAP; <28 days [g]	0-5 mg/L	0.1	mg/L	+/- 0.1
Chlorine	Hach Test Kit	SM 4500 Cl F	EPA 330.1; [f]	P, G; 200 mL	none; no headspace	4°C	ASAP; <15 min	0-3.5 mg/L	0.1	mg/L	+/- 0.1
Conductivity	specific conductance by conductivity meter	EPA 120.1	EPA 120.1; [f]	P, FP, G; 50 mL	none; no headspace	4°C	ASAP; <24 hrs	0-2500 est.	1	µohm/cm	+/- 1
Turbidity	nephelometric	EPA 180.1	EPA 180.1; [f]	A/P; 100 mL (amber bottle)	none; no headspace; store in dark	4°C	ASAP; <48 hrs	0-40	0.05	NTU	+/- 0.1

APPENDIX ASTORMWATER TEST METHOD SPECIFICATIONS

Laboratory Analytical Tests - Standard Indicator Parameters DWS/IDEP/WWM (Grab Sample)											
Parameter	Methodology	EPA 418 CFR 136 Approved Method (a)	Current or Alternate Procedure (b)	Container Type & Size (c)	Chemical Preservative	Holding Temperature (°C)	Holding Time (d)	Approx. Reporting Range (e)	Approx. Resolution or LRL	Units	Approx. Accuracy
Surfactants	colorimetric (MBAS)	SM 5540 C	EPA 425.1	P, FP, G; 100 mL	none; no headspace	4°C	</= 48 hrs	0.1-100	0.1	mg/L	+/- 0.05
Fluoride (total)	potentiometric, ion selective electrode	SM 4500-FB	EPA 340.2	P; 100 mL	none	none required	</= 28 days	0.1-1000	0.5	mg/L	+/- 0.1
Coliform (total)	Most Probable Number (MPN); Membrane Filter (MF)	SM 9221 B (MPN); SM 9222 B (MF)	SM 4500	PA, G; 50 mL	none or 0.0008% Na2S2O3	4°C	</= 6 hrs	1-2400	1	CFU/100 mL	+/- 1
E. Coli	Most Probable Number (MPN); Membrane Filter (MF)	SM 9223 B or Colilert (MPN); EPA 1603 or mColiBlue-24 (MF); [EPA 1103.1 (MF) MDEQ]	SM 4500	PA, G; 50 mL	none or 0.0008% Na2S2O3	4°C	</= 6 hrs	1-2400	1	CFU/100 mL	+/- 1
Potassium (total)	direct aspiration, flame atomic absorption	SM 3111 B	EPA 258.1	P, FP, G; 100 mL	not specified	4°C	</= 6 mos	1-20 w/dilution	1	mg/L	+/- 0.1
Color	spectrophotometric	SM 2120 C	EPA 110.3	P, FP, G; 50 mL	none	4°C	</= 48 hrs	1-100	N/A	color units	+/- 1
Ammonia (NH ₃ -N)	potentiometric, ion selective electrode	SM 4500-NH3 D or E	EPA 350.3	P, FP, G; 500 mL	H2SO4 to pH<2	4°C	</= 28 days	0.5-1400	0.5	mg/L	+/- 0.04

APPENDIX ASTORMWATER TEST METHOD SPECIFICATIONS

Laboratory Analytical Tests - WWM/TMDL's/Post-Construction TSS (Grab Sample)											
Parameter	Methodology	EPA 40 CFR 136- Approved Method [a]	Current or Alternate Procedure [b]	Container Type & Size [c]	Chemical Preservative	Storing Temperature °C	Holding Time [d]	Approx. Reporting Range [e]	Approx. Resolution or URL	Units	Approx. Accuracy
E. Coli	Most Probable Number (MPN); Membrane Filter (MF)	SM 9223 B or Colilert (MPN); EPA 1603 or mColiBlue-24 (MF); [EPA 1103.1 (MF) MDEQ]	SM 4500	PA, G; 50 mL	none or 0.0008% Na2S2O3	4°C	≤/ = 6 hrs	1-2400	1	CFU/100 mL	±/ - 1
Phosphorous	colorimetric, ascorbic acid	EPA 365.3	EPA 365.3	P, G; 500 mL	H2SO4 to pH<2	4°C	≤/ = 28 days	0.1-1.2	0.1	mg/L	±/ - 0.1
Sedimentation/Biota	REFER TO TSS BELOW										
Dissolved Oxygen	electrode	SM 4500 O.G.	EPA 360.1	A/G; 50 mL (amber bottle)	none; no headspace; store in dark	4°C if transported; test is time / temperature sensitive	ASAP; <15 min	0-20	0.1	mg/L	±/ - 0.05
Total Suspended Solids (TSS)	gravimetric, dried at 103-105°C	EPA 160.2	EPA 160.2	P, G; 200 mL	none	4°C	≤/ = 7 days	4-20,000	4	mg/L	±/ - 2

Notes:

[a] EPA 40 CFR 136 approved method, including listed EPA method, Standard Method, and/or ASTM method. Or, other MDEQ specified method.

[b] EPA procedure noted as approved for NPDES, but not listed in current 40 CFR 136, and/or laboratory identified equivalent alternative.

[c] P=polyethylene (generally HDPE); FP=fluoropolymer (not normally used due to cost); G=glass; A=amber; PA=autoclavable plastic, polypropylene; Q=quartz.

[d] Holding time specified in EPA guidance or referenced in Standard Method or literature for equivalent method.

[e] Dilution of sample may allow ability to analyze more concentrated samples, refer to test procedures.

[f] "Test Kits", including portable electronic sensors are allowed by MDEQ as noted in NPDES MS4 general permits.

[g] Preservative required only if sample is to be held for later analysis and not analyzed immediately (<15 min) with field test kit.

APPENDIX B

APPENDIX B

INSTRUCTIONS FOR COMPLETING CHAIN OF CUSTODY FORM

Proper information and completion of the Chain of Custody (COC) form is the responsibility of the person(s) conducting the sampling. At the time sample bottles are obtained, field staff shall also obtain a COC form. This form is a legally defensible document that ensures that the sample taken at a specific site is the same sample that is received in the laboratory. It also provides information on the sample condition and integrity as received by the laboratory. The form shall be filled out as neatly, accurately and completely as possible.

Use a separate Chain of Custody form for each individual facility. Multiple stormwater samples collected from the facility on the same day may be listed on one form. Identify grab samples collected for analysis by field test kits on the COC, but do not request laboratory analysis. Results from the field test kits shall be reported on the field inspection form only, not on the Chain of Custody form. Keep COC form in a separate sealed plastic bag to protect it from the elements.

1. Client information:

Include Client Name, Site Address, Phone Number, Project Number, Project Name, Client Contact, and Sampler's name. After the samples have been collected, the sampler shall neatly sign his/her name at the bottom right section of the form. Refer to section 6 below for signatures required when relinquishing samples.

- a) Client: Arch Environmental Group
- b) Address: 37720 Interchange Drive, Farmington Hills, MI 48335
- c) Project Number: Refer to school district project number
- d) Project Name: School District Name-School Site Name
- e) Phone Number: (248) 426-0165 Office Phone or (248) 427-0305 Office FAX
- f) Client Contact: All laboratory stormwater test results shall be addressed to Project Coordinator and sent by e-mail to labs@archenvgroup.com
- g) Sampler: Printed full name of the person who collected the sample(s)

2. Sample Information:

In the middle section of the form, information about each sample should be contained on a separate line item.

- a) Sample number: Use the abbreviated outfall code description, following in parenthesis by the type of sample "AAA-XXX (CCC)". Where "AAA" is the 3 letter code for the specific

school building site ID, “XXX” is the 2 or 3 digit code for structure number, and “CCC” is the 2 or 3 letter code for the type of sample. The type of samples are:

- DWS = dry weather screening. Example: NHS-05 (DWS)
 - WWM = wet weather monitoring. Example: NHS-05 (WWM)
 - RS = resample (where there was a problem with the original samples submitted to the lab or the initial results are suspected. Example: NHS-05 (RS)
 - QC = quality control sample. Example: NHS-05 (QC)
 - FT = field test sample. Example: NHS-05 (FT)
- b) Date: Carefully print the date in the following format MM/DD/YYYY. Example 05/10/2014
- c) Matrix: Print “H2O”.
- d) Comp: Leave blank unless the stormwater sample is a composite sample.
- e) Grab: Put an “X” in this box for all grab samples.
- f) Sample Description: Use the full outfall/discharge point code description, preceded by the type of sample “CCC @ AAA-XXX.BBB.OF”. Where “BBB” is the 2 or 3 letter code for type of structure. Refer to sample codes about, and the following examples:
- Put “DWS @ AAA-XXX.BBB.OF” if the outfall/discharge point sample is from dry weather screening, followed by the round of sampling in parenthesis after description. Example: “DWS @ NHS-05.CB.OF (2nd Round)”
 - Put “WWM @ AAA-XXX.BBB.OF” if outfall sample is from wet weather monitoring, followed in parenthesis by sampling purpose. Examples: “WWM @ NHS-05.CB.OF (TMDL) or “WWM @ NHS-05.CB.OF (TSS)
 - Put “RS @ AAA-XXX.BBB.OF” if this is a recent re-sample from the same outfall. Example: “RS @ NHS-05.CB.OF”. Describe the purpose for the re-sample in the “REMARKS” box. Example: “Resample of DWS @ NHS-05.CB.OF due to expired hold time on original samples”.
 - Put “QC @ AAA-XXX.BBB.OF” if this is a quality control sample. The QC Officer will notify the field team separately of what type of sample should be submitted to the lab or performed in the field (blank, split, etc.)
 - Put “FT @ AAA-XXX.BBB.OF” for grab samples analyzed with field test kits, and on the line below write which parameters were analyzed. For example, “(pH, Temperature, Ammonia, Surfactant)”.
- g) Number of Containers: Put “X”, where X is the number of sample bottles submitted for the analyses described in the next section. The specific number of bottles required for the tests are prepared and provided by the laboratory. For example, the standard dry weather screening (DWS) kit contains 7 bottles. Some of the sample bottles may contain approximately 1 or 2 mL of sulfuric or nitric acid, so extra care should be taken when opening and filling these bottles. Bottles with acid preservatives are marked by the laboratory. Refer to Appendix A for a description of the standard stormwater test procedures, containers, preservatives, and hold times. In order to reduce the number of containers and field sampling time, the laboratory may perform more than one type of test

per sample bottle, provided the type of bottle, preservative, sample quantity and other quality considerations are met for each test specification. Refer to section 3 below.

3. **Analyses Desired (Indicate Separate Containers):**

Bottles should not be rinsed prior to sampling. Bottles with preservatives should not be overfilled. Fill bottles to about the neck level with the exception of the VOA vial. The VOA vial should be filled to the top without headspace. See notes below. Sample bottle lids should be securely closed. Sample bottles should be labeled with the Project Name, Sample Number, and date of collection. Once labeled, the sample bottles should be immediately put on ice in the cooler. The laboratory will issue a unique number to each sample at the time it is logged into the laboratory and any issues with identification, limited sample volume, improper preservation, etc. will be flagged, and the client will be notified as detailed in Appendix C.

- a) As noted in 2(g) above, sample bottles are provided from the laboratory with each standard DWS kit. For each container put an "X" on the line and above the "X" write the specific analyses in angled box, as follows:

- i. "SURFACTANTS / FLUORIDE" (amber 1 L glass bottle, no preservatives)
- ii. "AMMONIA" (clear white 500 mL HDPE bottle, labeled "Sulfuric Acid", do not rinse or overfill)
- iii. "E. COLI / COLIFORM" (sterilized and sealed, clear 100 mL polystyrene IDEXX bottle, may contain $\text{Na}_2\text{S}_2\text{O}_3$ powder)



DO NOT SET THE CAP DOWN OR TOUCH THE INSIDE OF THE CAP OR BOTTLE. FILL THE SAMPLE BOTTLE TO THE MARKED LINE ON SHOULDER WITHOUT RINSING OR OVERFILLING.

- iv. "POTASSIUM" (clear white 100 mL HDPE bottle, labeled "Nitric Acid", do not rinse or overfill)
- v. "COLOR" (clear white 500 mL HDPE bottle, no preservatives)

4. Turnaround time:

Indicate the turnaround time needed. The standard is 10 working days – “2 WEEK TAT”. More rapid turnaround time may be subject to surcharges. Refer to laboratory contract for current surcharge factors. If turnaround time is critical, and approved by management, then it’s important to emphasize that fact to the laboratory person accepting the sample(s). Do not fill in the column marked “LAB #”. This is for laboratory use.

5. Remarks:

In this section, write “Send results to labs@archenvgroup.com”. This section should also be used for:

- a) Any special instructions from the sampler to the laboratory, or problems during sampling. Sampler shall put his/her initials next to comment.
- b) Upon receiving the cooler with the collected samples, the laboratory shall note the temperature at which the samples were received. Laboratory staff shall put his/her initials next to comment.

6. Relinquishing Samples and Verifying Chain of Custody:

Refer to the bottom left portion of the Chain of Custody form. It is necessary to maintain an unbroken, verifiable chain of custody for every sample in the event that analytical results for that sample are questioned. Each time the sample changes hands, the person relinquishing the sample shall note the item number and neatly sign his/her name and company affiliation in the column “Transfers Relinquished by” and record the date and time the sample was transferred. The person receiving the sample shall neatly sign his/her name and company affiliation in the column “Transfers Accepted by”. When samples are shipped in a cooler, the shipper should be indicated on the Chain of Custody form and the form should be sealed inside the cooler (inside sealed zip-lock bag, taped to inside lid). The samples must remain cool and be returned to the laboratory as soon as possible (preferably Monday through Thursday). In no case shall samples be delivered to the laboratory later than 24 hours after the samples were collected. As noted above, the laboratory employee receiving the samples shall record the temperature of the samples in the Remarks box.

Samples collected for analysis of the 7 indicator parameters using field test kits should be analyzed ASAP in the field. At a minimum, pH and Temperature must be analyzed immediately in the field. Should field conditions prevent analyzing for Surfactants, Ammonia, Turbidity, and Conductivity then these sample bottles may be transported back to the shop in the cooler and maintained at 4°C for analysis with the field test kits within 24 hours. Sample results (and date) shall be recorded on the field inspection forms.

APPENDIX C

APPENDIX C

LABORATORY SAMPLE ACCEPTANCE POLICY

1.0 Chain of Custody. Laboratory shall provide the client with a standard Chain of Custody form. A client may submit his or her own COC subject to approval. All COC's will be deemed acceptable if the following information is completed and legible:

- 1.0.1 Company name address phone # and fax #
- 1.0.2 Contact name
- 1.0.3 Sampler's or collector's name
- 1.0.4 Project identify and/or location
- 1.0.5 Date and time of sample collection
- 1.0.6 Sample identification, description or location
- 1.0.7 Matrix Type
- 1.0.8 Bottle(s) submitted (type and quantity)
- 1.0.9 If the sample is suspected of containing a dangerous substance
- 1.0.10 Any preservation (Nitric Acid, Hydrochloric Acid et.) which the sample has been treated with
- 1.0.11 Analysis requested
- 1.0.12 For any Bacteria Analysis, Residual Chlorine must be done in the field and noted on the chain of custody, if required
- 1.0.13 Requested Turn Around Time
- 1.0.14 Signatures of the persons involved in the chain of possession including the collector
- 1.0.15 Comments or special instructions
- 1.0.16 Any field notes

1.1 The Laboratory Manager shall review and document the following:

- 1.1.1 Answer the following questions (Refer to Appendix B for instructions on completing the COC)
 - 1.1.1.1 Are the samples submitted with a chain of custody?
 - 1.1.1.2 Is the number of samples the same as stated on the chain of custody?
 - 1.1.1.3 Are the bottle caps tight and in place?
 - 1.1.1.4 Were all the containers intact when received?
 - 1.1.1.5 Were the samples submitted in an ice chest?
 - 1.1.1.6 Were the samples received cold at 4°C?
 - 1.1.1.7 Were the samples within the holding time for the requested analysis?
 - 1.1.1.8 Is the volume of sample submitted sufficient for the requested analysis?
 - 1.1.1.9 Are all samples for air sensitive parameters free of headspace?
- 1.1.2 Ensure the Chain of Custody is completed correctly
- 1.1.3 Note the condition of the sample shipper and bottles upon receipt
- 1.1.4 Preservation type (if any)
- 1.1.5 Ensure that Residual Chlorine was done in the field, if required

- 1.1.6 For all Liquid Samples, the pH and temperature will be taken and recorded
- 1.1.7 Temperature of the sample or blank shall be noted on the COC
 - 1.1.7.1 All samples must be received chilled at 4°C (+/- 2°C) with the exception of where chilling would compromise the consistency of the sample. This is determined under the discretion of management.
 - 1.1.7.2 If samples are received above 4°C (>6°C)
 - 1.1.7.2.1 It will be noted on paperwork
 - 1.1.7.2.2 Data qualified
 - 1.1.7.2.3 Client shall be notified to verify that they want the samples run with the qualifier
- 1.1.8 Date and time of sample receipt
- 1.1.9 Signatures of persons involved in the Chain of Custody
- 1.1.10 Samples are accepted when all the conditions are met and the sample(s) deemed acceptable
 - 1.1.10.1 Samples which do not meet all the criteria, but are still deemed acceptable will be data qualified
 - 1.1.10.2 Samples will be deemed acceptable and data qualified upon client's approval.
- 1.2 For any other questions related to sample acceptance, the Laboratory Manager shall contact the client to resolve any potential issue prior to accepting and/or analyzing the samples.

Appendix “E”

Illicit Discharge/Illegal Spill Reporting Form

District Illicit Discharge/Illegal Dumping Reporting Form
Waverly Community School

Date: _____ Time _____

Inspectors: _____

I. ORIGIN OF REPORT

1. Describe the reason for conducting the investigation.

- | | |
|---|---|
| <input type="checkbox"/> Illicit Discharge Inspection (Routine) | <input type="checkbox"/> Facility Staff |
| <input type="checkbox"/> Citizen Complaint | |
| <input type="checkbox"/> Other _____ | |

II. SOURCE

1. Describe location of source of discharge (company name, address, cross streets, physical features, etc.)

2. Describe the Source:

- | | |
|--|--|
| <input type="checkbox"/> Residential | <input type="checkbox"/> Transportation Facility |
| <input type="checkbox"/> Construction Site | <input type="checkbox"/> Custodial |
| <input type="checkbox"/> Other _____ | |

3. Facility of the Source: _____

III. TYPE

1. Describe the type of material discharged:

- | | |
|--|---|
| <input type="checkbox"/> Sanitary Leak/Spill | <input type="checkbox"/> Paint Discharge |
| <input type="checkbox"/> Dumpster Discharge | <input type="checkbox"/> Cleaning Discharge |
| <input type="checkbox"/> Unhardened Cement Discharge | <input type="checkbox"/> Paint Discharge |
| <input type="checkbox"/> Vehicle Repair | <input type="checkbox"/> Vehicle Washing |
| <input type="checkbox"/> Grey Water Discharge | <input type="checkbox"/> Landscape Material Dumping |
| <input type="checkbox"/> Cooling Water Discharge | <input type="checkbox"/> Allowable Discharge |
| <input type="checkbox"/> Other _____ | |

Provide Additional Information: _____

2. Other Sources:

- | |
|---|
| <input type="checkbox"/> Illicit Connection |
| <input type="checkbox"/> Construction Site |
| <input type="checkbox"/> Other _____ |

IV. FOLLOW-UP AND ENFORCEMENT ACTIVITIES

1. Describe Corrective Actions: _____

2. Describe Enforcement Action:

- | | |
|---|---|
| <input type="checkbox"/> None/Incident Resolved | <input type="checkbox"/> Verbal Notice |
| <input type="checkbox"/> Administrative Action | <input type="checkbox"/> Cleaning Discharge |

3. Date Resolved: _____

4. Responsible Party

Signature _____