City of Marion, Iowa

2016 ANNUAL REPORT

September 30, 2016

STORMWATER POLLUTION PREVENTION & MANAGEMENT PROGRAM

NPDES PERMIT NUMBER: 57-51-0-02

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Introduction

The City of Marion has completed its eleventh year of the Storm Water Pollution Prevention and Management Program as outlined in the City's NPDES permit number 57-51-0-02. This annual report will outline and discuss the activities the City has performed in the past year to meet the requirements of the permit.

EPA Inspection

On December 9th, 2015, an EPA inspector conducted an unscheduled inspection of one of Marion's active residential developments. The City of Marion was not involved in this inspection – it was entirely between the EPA and the owner of the development, although the EPA did provide the City of Marion with a copy of the report.

After working closely with the owner of the development that was inspected, and using the results of the EPA inspection, the City of Marion has implemented a more rigorous inspection process with higher compliance expectations for Stormwater Pollution Prevention Plans and General Permit #2 construction activities.

City stormwater compliance inspections now include a packet of information that is provided to every GP#2 holder – and, where applicable, the site's general contractor – that includes the following:

- A summary guidance that highlights several parts of the GP#2 and provides clarification of each requirement. A copy of this is included in Appendix B.
- A copy of the General Permit #2
- Copies of the Marion Municipal Code:
    - Chapter 91 Illicit Discharge to Storm Sewer System
    - Chapter 155 Erosion and Sediment Control
    - Chapter 156 Storm Water Management
- The EPA expedited settlement worksheet that details all inspection items and penalties for each violation. A copy of this is included in Appendix B.

This information packet is also provided whenever necessary to individual builders so that they are fully aware of the regulations and requirements, and what is expected of them on their construction sites.

Each permittee, contractor, builder, etc. that receives this packet is instructed to keep this with their SWPPP or with their construction documents.

IDNR Municipal Separate Storm Sewer System (MS4) Program Assistance Visit

On May 9th, 2016, a permit assistance visit was conducted by Joe Griffin on Marion's MS4 program. The visit was to evaluate efforts by the City to comply with its MS4 permit and provide input to assist in this. The requirements in three of the MS4 program's measures were examined during this visit. These were Illicit Discharge Detection and Elimination, Construction Site Storm Water Runoff Control and Post-Construction Storm Water Management. Activities the City has implemented to comply

with the requirements included in these three measures were discussed and evaluated. The resulting report from this visit is included in Appendix B.

Using the recommendations and requirements provided in the report of this visit along with the results of the EPA inspection on December 9th, 2015, the City of Marion took immediate action to ensure that developers, builders, contractors, and anyone involved in construction or grading activities in Marion are fully aware of the higher compliance expectations for Stormwater Pollution Prevention Plans and General Permit #2 construction activities.

A 30-minute seminar and presentation was developed detailing regulations, policies, enforcement procedures, and penalties that are in place for stormwater pollution prevention. This seminar will be offered to the development community as frequently as twice each month. Initially, attendance at one of these seminars will be voluntary. It is expected that within the next 12 to 24 months, attendance at this seminar will be mandatory before a builder will be issued a building or erosion control permit for a construction project.

The presentation for this seminar is included in Appendix B.

Stormwater Utility

The City of Marion continues to successfully administer an ERU (equivalent runoff unit) based Stormwater Utility, which was implemented in October 2013. This ERU based system has been proven to be an equitable method of determining and collecting stormwater fees in that larger properties with greater amounts of impervious surfaces have a greater impact on stormwater runoff than properties that are smaller and/or have less impervious surfaces. Consequently, the larger properties have a larger Stormwater Utility Fee.

Impervious areas for these non-residential parcels were digitized using aerial photography and parcel data in both CAD and GIS, and this data is updated regularly using building permit information, recent aerial photography, and construction plans for new development.

The base ERU for Marion is 2,791 square feet, which is the statistical average impervious area of the residential living units within the City of Marion. The Stormwater Utility rate is $1.59 per ERU. Residential monthly charges are 1 ERU plus a $3.33 administrative service charge, or $4.92 per month. Stormwater Utility fees for non-residential parcels (Commercial, Industrial, and Multi-Family 5-Units or more) are calculated based on the parcel impervious area divided by the ERU times $1.59 plus a $3.33 service charge. There is a maximum monthly charge of $156.80 for any individual property. The City uses revenue from the Stormwater Utility to finance stormwater related capital improvements and initiatives that support our NPDES programs.

Stormwater Utility fees are collected through Marion water bills. However, owners of parcels that have impervious surfaces with no water account associated with them – such as parking lots – receive their bills as an invoice from the Marion Finance Department.

Non-residential parcels with storm water controls and Best Management Practices may be eligible for a credit on their Stormwater Utility Fee. Owners of a non-residential property with a detention basin controlling the *quantity* of water running off their site are eligible for a credit of up to 25% off their Stormwater Utility Fee. If the detention basin also treats the *quality* of water running off their site, the owner is eligible for another 25% off their Stormwater Utility Fee. Other Best Management Practices such as pervious pavers, bio-retention cells, or infiltration trenches can provide up to an additional 15% off Stormwater Utility Fees. The maximum credit for any property is 65%. The intent of the credit system is to encourage and reward those parcels who manage their stormwater in efficient, effective ways and to motivate others to do the same.

Property owners of non-residential parcels who are not currently getting a credit but believe they have proper stormwater controls have an opportunity to submit an application for credit. Marion has a Stormwater Utility Credit Committee to review these applications and, if warranted, award this credit. Although residential accounts are not eligible to receive a credit on their Stormwater Utility Fee, the City of Marion has recently implemented a rebate program for residential property owners who install rain gardens, rain barrels, or soil quality improvements. This new program is described below.

Additionally, a property owner receiving a Stormwater Utility Fee can apply for an *adjustment* to their fee if they believe that the amount of impervious surface has changed, or if they would like their bill to be sent to a different mailing address.

As required in our Stormwater Utility Ordinance, a working group made up of Marion residents was developed to provide review of applications for credits and adjustments by non-residential properties. Members of the Stormwater Utility Credit Committee are appointed by City Council members and are educated on stormwater runoff issues and stormwater Best Management Practices. The Committee meets as necessary when credit applications are submitted. We did not receive any applications for Stormwater Utility credits since last year's report, so the committee did not need to meet.

Residential Stormwater Best Management Practices

The City of Marion also continues the Residential Cost-Sharing Program to promote the construction of stormwater BMPs such as rain gardens, rain barrels, and soil quality restoration to capture and infiltrate stormwater in residential areas. Residential properties in Marion are not eligible for credits – or discounts – on their Stormwater Utility Fee. This program would reduce stormwater runoff, improve water quality, and increase local awareness of the importance of protecting our local streams and lakes.

Residents who install a rain barrel on their property are eligible to receive a one-time rebate of up to $50 per residence. Residents who install soil quality restoration on their property are eligible to receive a one-time rebate of up to $350 per residence. Residents who install a rain garden on their property are eligible to receive a one-time rebate of up to $400 per residence.

The one-time rebate will be granted to applicants after inspection of the BMP by a city staff member certified as Iowa Certified Inspection and Maintenance Program for Stormwater Practices (ICIMPSP). Future routine inspections will then be made by city staff to ensure the BMPs are functioning properly.

The annual budget for the first year of this program is $5,000. Depending on program participation, this amount can be increased.

Web-based Inspection System

In response to the need for better reporting and documentation of inspections related to MS4 program management and General Permit #2 stormwater pollution prevention, the City of Marion continues to use a complete and fully customizable web based data collection application called *Fulcrum* for quarterly and annual inspections.

Fulcrum allows users to create their own mobile forms for inspections, checklists, surveys, etc. Data can be collected and the forms can be revised on any internet accessible device – desktop workstation, laptop, smartphone, or tablet. GPS-enabled devices provide an extra level of data collection by plotting a map point (latitude and longitude) where each new record is created. Map points can also be plotted by hand on devices that are not GPS-enabled.

Several industry specific templates are available to use as-is, or they can be revised to meet a user's specific needs. Forms can also be developed completely from scratch. Although there was an available template for construction site erosion and sediment control, a custom inspection app was developed based on specific guidelines and requirements of the IDNR's General Permit #2, Marion's MS4 permit, and also the Iowa Department of Transportation.

Data collection and inspection forms were developed for construction site stormwater pollution prevention, stormwater outfalls, and stormwater controls such as detention basins.

In addition to a map showing the location of all inspections, reports can be generated that include the details – including photos – of each inspection. Reports can be saved as PDF for records management or to provide to permit holders or property owners to notify them of any required corrections that need to be made to stormwater controls. Data can also be exported for use in other databases, spreadsheets, GIS applications, or for data archiving.

More information on Fulcrum can be found on its website www.fulcrumapp.com. Sample reports of Marion's inspections of outfalls, stormwater controls, and construction site SWPPPs can be found in Appendix B of this stormwater report.

New Code Enforcement and Permitting Software

The City of Marion has implemented a new integrated online system for project planning, permit tracking, and code enforcement called *New World Community Development Software*. This system will automate tasks and make licensing and permitting processes

more efficient. It allows Marion staff across multiple departments to track and access all related information from a single screen, including blueprints, maps, permits, code enforcement activities, address information and historical information. In addition to improving citizen service, the software will streamline workflow processes to help improve enforcement of NPDES and MS4 regulations.

The software "went live" on September 6th, 2016, and is currently being used by the Marion Engineering, Building, Planning, and Finance Departments.

Finances

The City had expenditures in the amount of $14,596.03 last year out of the Stormwater Pollution Prevention and Management Program account. This would include costs for training seminars, publications, meeting room expenditures, and the Iowa Stormwater Education and Outreach Program. The City budget for the coming year is $15,000.00, of which $7,500.00 is earmarked for residential stormwater Best Management Practices rebates, a new program which will be described later in this report.

The above amount does not include any staff time to create and administer our Stormwater Pollution Prevention and Management Program. Our staff salary in dollars devoted to this program is approximately $203,000.00.

The expenditure amount also does not include the donation of meeting rooms by Marion for the ICWMA Board of Directors meetings or ICWMA Technical Team. The Board of Directors meets quarterly for two hours, and the Tech Team meets monthly for two hours.

Respectfully submitted,

Steve Cooper, GISP, ICCSPPI, ICIMPSP
Stormwater Coordinator, City of Marion

Part A: Public Education and Outreach

General Stormwater Education Brochures

The City of Marion receives support and information from the Iowa Stormwater Education Program (ISWEP). They continue to produce multiple informational storm water management brochures to assist in educating the public and businesses served by Marion. The brochures, pamphlets, and bookmarks are available for the public to pick up at the Marion City Hall. Stickers, wipe on tattoos, coloring books, and pencils with storm water themes supplied by ISWEP are available for children at the Engineering front desk.

The City of Marion had 211 new single family or multifamily building permits in the last fiscal year (July '15 to June '16). Brochures and information packets are provided to builders and developers including information on stormwater pollution prevention, erosion and sediment controls, concrete washout use, and stormwater tips for swimming pool owners. A document called "Putting FAIR into Action: Recommended Guidelines for Infiltration-Based Practices to Achieve Better Water Quality in Metro Area Communities" is provided to all property owners who are in need of stormwater management guidance on their property. This booklet provides options on how to detain the 1" rain event over the site.

Telephone Hotline Number & Stormwater Web Page

The telephone number for Marion's stormwater hotline is (319) 743-6340 and is listed on the City's website. The phone number routes all calls to the Engineering Department. When a call is received, a complaint/investigation form is filled out by our administrative assistant and passed along to an inspector to follow up on the caller's complaint or general question. Long-term issues that can't be resolved right away on site are logged into a drainage complaint spreadsheet so they can be tracked.

The City of Marion's website is www.cityofmarion.org. Under the Engineering Department section is a link called *Stormwater Management*.
http://www.cityofmarion.org/departments/engineering/stormwater-management

Marion's Stormwater Management web page has links to www.iowasudas.org, www.iamu.org, www.rainscapingiowa.org, and www.iowastormwater.org where the latest methods of BMP's are available. The booklet called "Putting FAIR into Action: Recommended Guidelines for Infiltration-Based Practices to Achieve Better Water Quality in Metro Area Communities" is available to download. In addition, two instructional videos are posted to show what citizens can do to help maintain and protect Marion's streams.

A printable form is available on this site to report illegal or illicit discharges of non-stormwater that is sent to the Engineering Department.

WORKSHOPS, CERTIFICATIONS, AND PUBLIC EVENTS

Iowa Stormwater Education Partnership

The Iowa Stormwater Education Program separated from the Iowa Association of Municipal Utilities in early 2016 and has now become the Iowa Stormwater Education *Partnership*. This provided an opportunity for the City of Marion to take more of a leadership role with ISWEP by taking a seat on the ISWEP Board of Directors. Although there have been no major changes in how ISEWP operates, many of the workshops and certification training sessions are being re-evaluated to make sure they include the most current information on stormwater management policies and practices. The City of Marion is playing a large role in these education improvements, especially for workshops and certifications related to construction site stormwater pollution prevention.

One example of this is a new certification being offered by ISWEP. The first *Iowa Certified SWPPP Designer* (ICSD) workshop will be offered during the Iowa Stormwater Summit being hosted by Marion at Squaw Creek Park in December 2016. The need for this ICSD certification was identified at the Stormwater Pollution Prevention Plan Design and Preparation Workshop which was developed by ISWEP and hosted by the City of Marion at the Lowe Park Center in April 2015.

The City of Marion again collaborated this past year with the neighboring cities of Cedar Rapids and Hiawatha as well as the Iowa Stormwater Education Program (ISWEP) to host three stormwater education workshops. The goal of this collective effort was to provide a wider range of education opportunities for professionals such as engineers, contractors, builders, and others who work with stormwater pollution prevention in the Marion and Cedar Rapids metropolitan area.

Workshop 1: Iowa Certified Inspection and Maintenance Program for Stormwater Practices (ICIMPSP) at the Hiawatha City Hall – November 18th
This program was developed to provide a comprehensive understanding and access to tools needed to keep stormwater practices in working order to improve water quality, manage water quantity and reduce the likelihood of practice failure. Topics covered during this day-long workshop included: Overview of stormwater management and regulations, Iowa Stormwater Management Manual for stormwater BMPs, components, function, inspection and maintenance of BMPs, field tour and tools needed for success as a Certified ICIMPSP Professional.

Representatives from the following companies and organizations attended this workshop:

City of Marion	City of Cedar Falls
Environmental Consulting Technology, Inc.	Kingston Services
Tiedt Nursery	Tidy Site Services, LLC

The City of Marion has five inspectors who received ICIMPSP certification in 2014.

Workshop 2: Erosion & Sediment Control Ordinance Updates & Concrete Washout Review Lunch & Learn at Lowe Park Center – December 9th
Some of the topics covered in this seminar included:

- Policy Updates
- Review of ordinance requirements - cover any changes in the works or recently adopted
- SWPPP fundamentals – why this is important
- Difference between Erosion & Sediment Control & why you need to know
- Buttoning up for the winter - Correct installation of practices - what not to do?
- penalties for noncompliance
- Transfer Of Ownership Agreements - who is responsible for what
- Drainage easements & swales

Anyone and everyone who works with concrete in the area – whether they mix it, pour it, clean it, smooth it, cut it, fix it, decorate it, wash it, or even just order it for a job site – was invited to attend this concrete washout Lunch & Learn Workshop. Attendees were trained on what is expected from a regulatory perspective, whether the job is a street being poured in a new development or an individual driveway or a single sidewalk pad or doing decorative work on a backyard patio. They saw the latest pollution prevention Best Management Practices for concrete work, and had questions answered as it relates to concrete management and regulations by cities of Marion, Hiawatha, and Cedar Rapids as well as the Iowa Department of Natural Resources.

In addition to the notices sent by ISWEP on this workshop, a direct mailing was sent from the City of Marion to more than 50 contractors and builders who do work in Marion and Cedar Rapids. This mailing included owners of active General Permit #2 from IDNR.

More than 40 people attended these two workshops from the following companies and organizations:

Anderson Bogert Engineers	DK Land Services	ITC Midwest
Hall & Hall Engineers, Inc.	Hayden Contracting	Olson Brothers
Henriksen Washout Systems	Knutson Construction	Point Builders
Morris Wood Enterprises, LLC	Rogers Concrete	Scott Survey, Inc.
MSA Professional Services	Shive-Hattery, Inc.	Skogman Homes
Tidy Site Services, LLC	University of Iowa	STS Civil
Shoemaker & Haaland Engineers	Cedar Rapids Linn County Solid Waste Agency	
Culver's Lawn and Landscaping	Foth Infrastructure & Environment, LLC	

<u>Workshop 3: ISWMM Review Cedar Rapids Public Services Center – December 16th</u>
This day long workshop provided attendees with information on the Iowa Stormwater Management Manual and covered topics including:

- The history of the manual
- Soil quality management methods and restoration
- Compost qualities and characteristics for use in soil quality management
- Policy updates of local communities
- Pretreatment, Bioretention, and Bioswale design and standards

More than 45 people attended these two workshops from the following companies and organizations:

Anderson Bogert Engineers	City of Asbury	Bolton & Menk, Inc.
Cedar Landscaping	City of Cedar Rapids	City of Marion
City of Waterloo	Culver's Landscape	Foth Infrasturcture
Hall & Hall Engineers, Inc.	Linn County Planning	Skogman Homes
Snyder & Associates, Inc.	MMS Consultants Inc.	Shive-Hattery, Inc.
YTT Design Solutions	Emmons & Olivier Resources, Inc.	
CR Area Home Builders Association	Shoemaker & Haaland Engineers	

Iowa Certified Construction Site Pollution Prevention Inspector (ICCSPPI)

The ICCSPPI program was developed in 2004 to meet the demands in the ever-changing field of construction site stormwater pollution prevention, and is the first certification program in Iowa for construction site inspectors. It offers an affordable, time efficient, certification opportunity for construction site inspectors who are responsible for construction site or MS-4 inspections.

The ICCSPPI program is developed especially for Iowa inspectors based on Iowa design guidelines and regulatory requirements. Topics covered during this day-long workshop included: regulatory requirements; erosion, sediment and velocity control; post construction stormwater management practices for water quality and quantity management; SWPPP essentials; inspector requirements, and stream bank stabilization. A practice inspection is conducted during class and sample inspection forms are provided to workshop attendees.

Multiple requests have been requested from the development community in the Marion and Cedar Rapids area for these workshops, so Marion offered 2 of these workshops in the last year. The first was on December 10th, 2015, at Marion's Thomas Park Safe Room. The second was on August 2nd, 2016, at Marion's Lowe Park Arts & Environment Center. More than 30 people attended these two workshops from the following companies and organizations:

City of Marion	Pirc-Tobin Construction Inc.
Integrity Custom Homes	Veenstra & Kimm, Inc.
Compass Commercial Services	Sustainable Landscape Solutions
Fritz Development, LLC	S.A.M.S. Stormwater and Management Services
Abode Construction	Midwest Development

One of Marion's recently hired inspectors attended the December 10th workshop. Four of Marion's Engineering Department staff attended the August 2nd workshop for recertification. The City of Marion now has six inspectors recognized as having credentials to conduct pollution prevention inspections at construction sites.

Marion City Showcase, Marion Messenger Newsletter, & Uptown Marion Market
On Saturday, April 23rd, Marion hosted its second City Showcase event in City Square Park. City staff were on hand to visit with residents and share information about projects and initiatives. Various City vehicles were on display and, as Stormwater Coordinator, I took advantage of the opportunity to teach stormwater behaviors to those in attendance. Approximately 350-400 attended the event.

The Marion Messenger is a quarterly print newsletter mailed to all residents in the 52302 zip code and is distributed to new utility customers. 18,000 copies are printed each quarter, with extras stocked in brochure racks at City Hall, the library, and other City facilities. It contains stories that highlight events happening within the City, new developments, safety and traffic issues, stormwater pollution prevention for both residential and commercial properties, and other hot topics in Marion.

To better engage with citizens, the City had a booth and provided an activity at the three Uptown Marion Markets and the Fall Market/Swamp Fox Festival in 2016. Children were able to spin the wheel, answer trivia questions to win a prize, and learn about watersheds using an *Enviroscape* stormwater model. Parents were able to learn more about the inner-workings of the City, with special emphasis on the Water, Engineering, Library and Planning & Development Departments. Roughly 100-150 people stopped by each month.

Regions 1 & 6 MS4 Program Meeting
On May 5th IDNR hosted a meeting at the Coralville City Hall to discuss important stormwater topics and promote a better working relationship between communities implementing NPDES regulations. Topics covered and discussed in this meeting included complaint investigation procedures, MS4 assistance visits, GP#2 enforcement, and implementing higher compliance expectations.

MEDIA AND TELEVISION

ISWEP Public Service Announcements

The Iowa Stormwater Education Partnership (ISWEP) has developed four public service announcements to be used by member communities in their public education programs. These PSAs show a raindrop drawing attention to the different types of stormwater pollution such as oil, lawn fertilizer, and car wash soap, with a narrator explaining how underground pipes then carry those pollutants to the closest stream, river or lake, with no treatment in between.

College students in the Marion and Cedar Rapid area were hired to play roles of the raindrop as well as a person washing his car, a person changing the oil in his car, and a person fertilizing his lawn. Video was recorded of these actors in

several areas in the Marion and Cedar Rapids area by Robin Kash, a local advocate of water quality and environmental issues who also provides high quality audio/visual processing services. I thought it would be a good idea to have the voice of these PSAs be an actual stormwater professional in Iowa and not just a paid actor, so I provided the voice of the narrator in the videos.

The videos are availabel for viewing on the City of Marion stormwater web page: http://www.cityofmarion.org/departments/engineering/stormwater-management/best-management-practices

City of Marion Stormwater Educational Video

-MSA Consultants produced a 20-minute storm water video specifically made for the City of Marion, with scenes shot in the city and interviews/commentary from City and County staff. This video covers the basics in watershed drainage, basins, water quality issues, flooding, and explains where stormwater does go once it goes into an intake. The City gave copies of this video to both area school districts, and provided a YouTube link on the City's website to view the video.

Part 1 of the video can be seen here:
https://www.youtube.com/watch?v=uYSsSW54Bv8&feature=youtu.be

Part 2 of the video can be seen here:
https://www.youtube.com/watch?v=uv4m3hUIlZY&feature=youtu.be

Part B: Public Involvement and Participation

Stormwater Advisory Committee

Marion's Stormwater Advisory Committee consists of seven Marion residents from a variety of backgrounds: two Professional Engineers from private engineering firms (one is retired), a Licensed Land Surveyor who works with a local development company, a Stormwater Specialist with ISWEP, a local NRCS Official, and a City Planner.

As required by Marion's NPDES permit, the Stormwater Advisory Committee meets annually to discuss current initiatives in stormwater management and public education/outreach, and provide guidance to City staff. This annual meeting was held on August 25th, 2016. The majority of the discussion at this meeting was the 30-minute seminar and presentation being developed, as to get feedback from the committee on recommendations and revisions.

Also in attendance at Stormwater Advisory Committee meetings are Marion's City Engineer, one of Marion's Assistant City Engineers, and one of Marion's Project Engineers who is trained in stormwater management and erosion control issues and functions as a back-up should the Stormwater Coordinator not be available.

The Stormwater Advisory Committee also serves as the authority for Marion's Neighborhood Drainage Assistance program. This program provides financial assistance, in the form of reimbursement for draintile materials, to groups of residents who wish to alleviate areas with poor drainage that affect multiple properties. The residents complete an application for drainage assistance which is reviewed by the Stormwater Advisory Committee on a quarterly basis to determine if the proposed neighborhood drainage project is suitable and provide recommendations to staff.

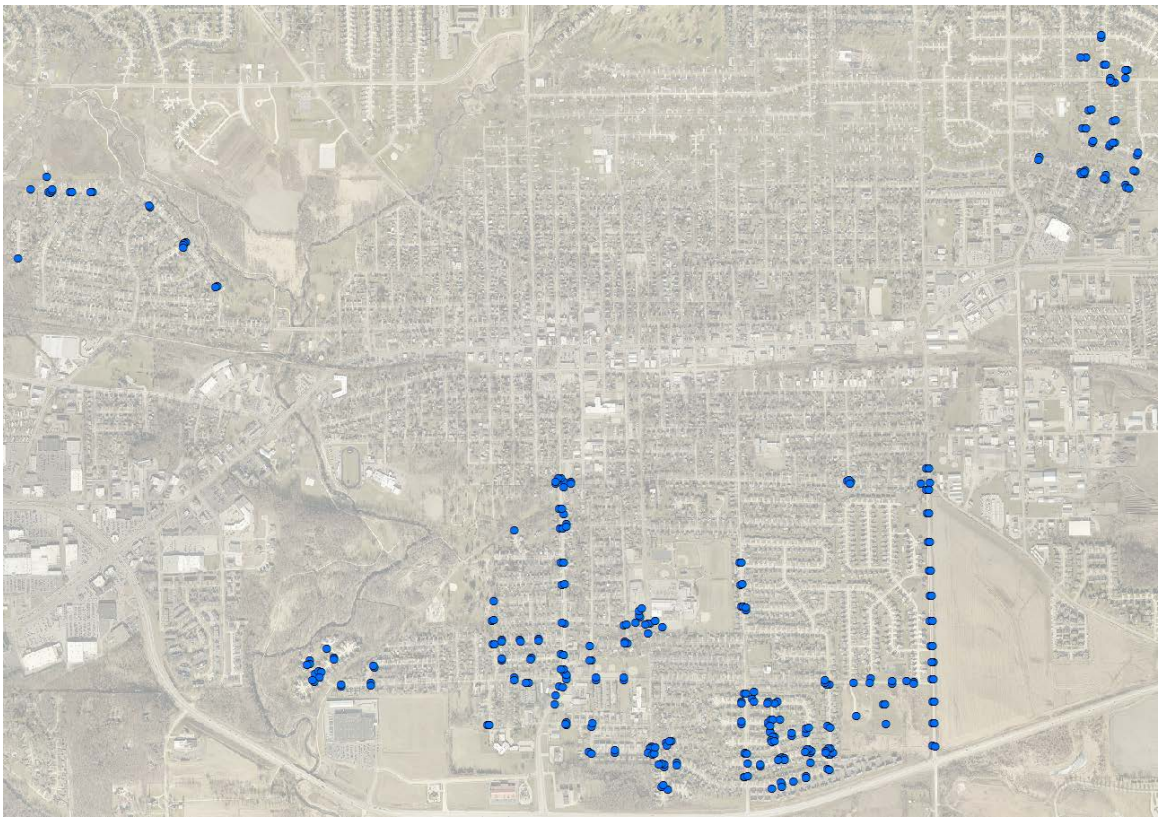
Storm Sewer Stenciling with Marion High School

The City's storm sewer intake stenciling program continued this year, with the help of Marion High School students. The City supplies the stencils and paint, while the school provides students to paint the "No Dumping, Drains to River" messages on the intakes.

This program teaches the students what a storm intake is and where the intake discharge actually drains too. At the same time, the stencils are an excellent warning to help prevent illicit dumping into intakes.

On May 16th, 2016, approximately 20 Marion High School held an entire day of service and volunteer work called *One Day in May*. The students broke into three teams lead by teachers and stenciled 310 storm sewer intakes in the Indian Creek and Squaw Creek watersheds,

highlighted in the map below.



The map above shows the locations of storm sewer intakes that were marked with stencils

INDIAN CREEK WATERSHED MANAGEMENT AUTHORITY

The City of Marion continued its leadership role in ICWMA over the last year by serving on the Board of Directors as Treasurer and by working closely with the ECICOG to coordinate administration of the plan with all stakeholders in the Indian Creek Watershed.

The Indian Creek Watershed (HUC-10 0708020601) spans a 94-square mile area within Linn County, Iowa and is fed by Dry Creek, East Indian Creek, and Squaw Creek, and ultimately drains to the Cedar River near the intersection of Otis Road SE and Bertram Road, south of Mt. Vernon Road SE. The City of Marion lies almost entirely within this watershed.

The Indian Creek Watershed Management Authority (ICWMA) was formed in August 2012 as a cooperative agreement among the jurisdictions within the watershed – Marion, Cedar Rapids, Hiawatha, Robins, Linn County, and the Linn Soil & Water Conservation District (Alburnett is the only jurisdiction in the watershed not participating) – to provide a framework for watershed level planning and management. The goal of ICWMA is to increase communication and coordination within the Indian Creek Watershed to reduce flood risk and improve water quality.

ICWMA is managed by Jennifer Fencl of ECICOG and the ICWMA board of directors is made up of public officials from jurisdictions within the watershed:

- Sandy Pumphrey, PE, CFM (Chair), Project Engineer, City of Cedar Rapids
- Les Beck (Vice-Chair), Director of Planning & Development, Linn County
- Steve Cooper (Secretary / Treasurer), Stormwater Coordinator, City of Marion
- Vince Bading, Public Works Superintendent, City of Robins
- John Bender, Engineering Coordinator, City of Hiawatha
- Bruce Frana (Chair), Assistant District Commissioner, Linn County SWCD

The ICWMA watershed assessment process embraced a cooperative, multi-jurisdictional planning approach facilitated by the East Central Iowa Council of Governments (ECICOG) in partnership with several local, state, and federal agencies for plan development. The resulting Indian Creek Watershed Management Plan (ICWM Plan) identifies strategies and recommendations for stormwater management and water quality protection, including specific implementation activities and milestones. The Plan was completed and presented to the public in June 2015 and adopted by all six of the ICWMA members at policy maker meetings during July and August of 2015.

The Plan is available on the ICWMA website http://indiancreekwatershed.weebly.com
A link to the plan is also available on the Marion Stormwater web page:
http://www.cityofmarion.org/departments/engineering/stormwater-management

Plan Evaluation

In order to effectively advance the strategies and activities identified in the ICWM Plan, a routine evaluation to measure the progress towards plan implementation must be completed to meet the long-term goal of a healthy watershed. As outlined in Chapter 11 of the ICWM Plan document, the evaluation will be achieved through annual plan

reviews and plan updates that occur every five years. The reviews and updates are an important component of the adaptive management approach of the plan which recognizes the limitations of current knowledge regarding future situations, and the inevitability of change. The ICWM Plan provides a big-picture context for specific actions based on best available data, and will need to be adjusted as better information or new conditions arise. This document represents the Year 1 ICWM Plan Review of the first 5-year Plan Phase that spans fiscal year 2016 to fiscal year 2021. In fiscal year 2021, a full plan update will be conducted.

Annual Plan Review

The purpose of the annual plan review is to identify and discuss implementation challenges to determine if there is a need for plan amendments. The annual reviews are a reminder that the ICWM Plan is adaptable, dynamic and flexible.

The process to complete the Year 1 ICWM Plan Review included an information request of the ICWMA Board members and key Technical Team members involved in monitoring or implementation activities. The information collected includes:

- Education Activities – Reporting of education and outreach efforts over the past 12 months
- Alignment of policies– Status of adopting model ordinances during the year
- Watershed Improvement Projects – Track implementation of projects and locations, provide watershed-wide summary with a map
- Watershed Conditions Assessment – Update and summarize watershed analysis and monitoring project data

The Year 1 ICWM Plan Review first examines the organizational management for the ICWMA including a review of the member contribution formula and the fiscal year 2016 work plan tasks and results. Next, individual ICWMA member actions, improvements, activities and results related to the improvement of the Indian Creek watershed in fiscal year 2016 are summarized. The annual plan review concludes with some additions to the existing watershed assessment and recommendations for the coming year.

Evaluation of FY16 Organizational Management

While there were many positive results from the fiscal year 2016 work plan, several of the tasks proved to be more time consuming than expected. ECICOG reported that forming sub-committees to advance Plan implementation and many of the education and outreach activities were tasks beyond existing staff capacity. The ICWMA Board requested a scaled back organizational management work plan for fiscal year 2017 and is considering the possibility of hiring a dedicated Watershed Coordinator in the future. The ICWMA Board is also pursuing the establishment of a detailed strategic plan for the remainder of the ICWM Plan's Phase I – Fiscal Year 2016 to Fiscal Year 2021.

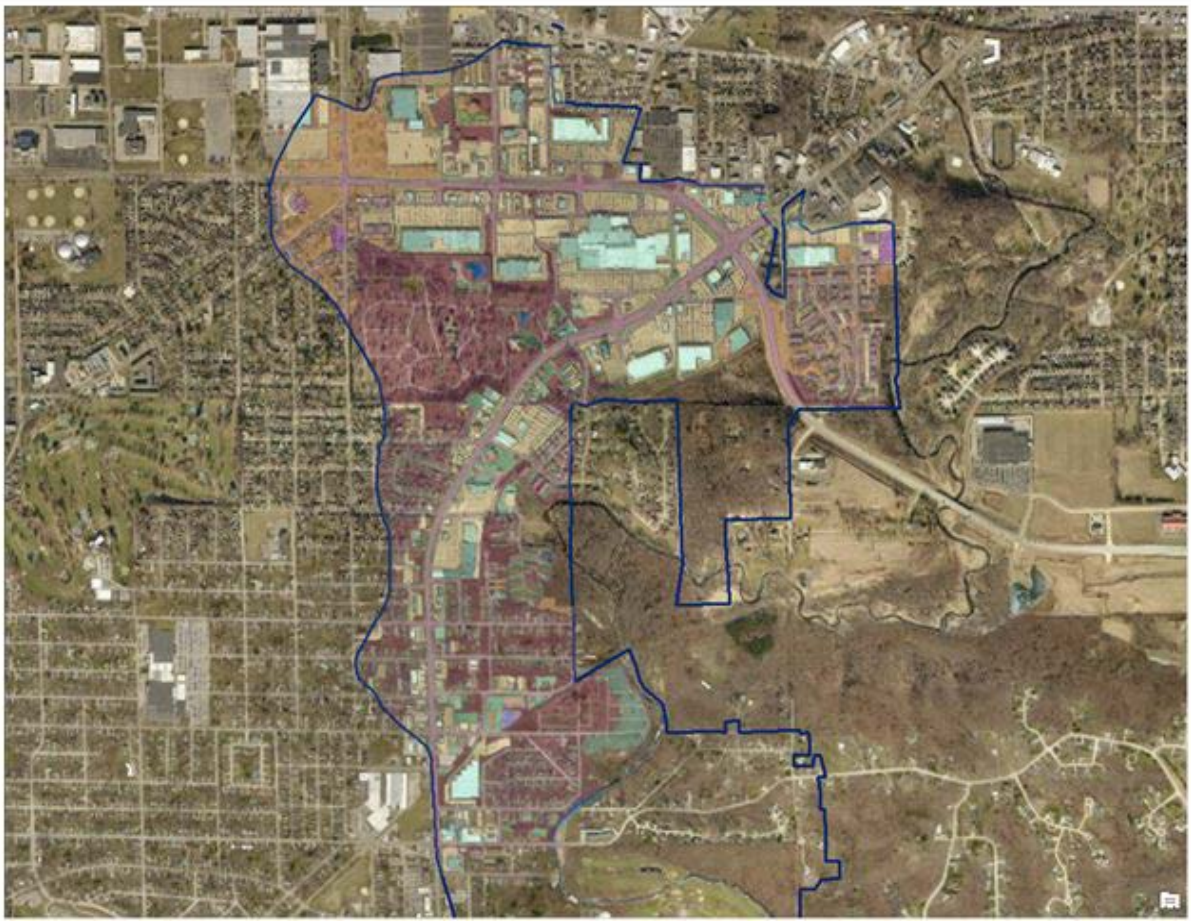
Updates to Watershed Assessment

The following activities took place in fiscal year 2016 to add to the watershed assessment conducted as part of the ICWM Plan development.

Hydrologic Modeling: UNI GeoTREE Center

The ICWMA Board partnered with the University of Northern Iowa Geoinformatics Training, Research, Education, and Extension Center (GeoTREE Center) to complete a

pilot project to demonstrate the capabilities of urban stormwater modeling. The GeoTREE Center received a grant from the Iowa Department of Agriculture and Land Stewardship State Soil Conservation Committee Research & Development program to identify several urban watersheds in the state for which a coupled GIS-urban stormwater modeling system can be applied. A sub-watershed of the Indian Creek watershed was selected for the GeoTREE Center project as outlined in the map below.



Detailed Source Area of Indian Creek Sub-watershed (near Lindale Mall)

The GeoTREE Center has developed freely available GIS-based tools and databases (ArcSLAMM) that work with the powerful and widely used urban stormwater model WinSLAMM. The use of ArcSLAMM and WinSLAMM together will provide runoff amounts, pollutant loads, and BMP modeling to measure anticipated impact in selected drainage areas.

The project will consist of digitizing detailed source areas (roofs, driveways, sidewalks, parking lots, grass, etc.) within the sub-watershed (shown in Figure 5) and then using LiDAR elevation data to delineate the smaller drainage areas. The result will be a map of the sub-watershed representing drainage areas according to how much runoff it produces as well as pollutant (sediment, P, and N) loads and concentrations. This will identify “hot spots” contributing more runoff or pollutants within the sub-watershed. BMPs can then be introduced into the model of a specific drainage area to see conditions before the BMP and results after implementation (i.e. how much improvement).

The GeoTREE Center project will add to the understanding of urban stormwater conditions within the Indian Creek watershed and may help secure grant funding to address this sub-watershed's contribution to the overall health of the watershed.

Watershed Maps: Army Corps of Engineers – Rock Island District
The Army Corps of Engineers – Rock Island District produced several detailed maps as part of the hydrology modeling work for the ICWM Plan. These maps have been formatted to work well as poster-sized displays and are available by contacting the Stormwater Coordinator with the City of Marion.

Conclusions
The first year of the ICWM Plan implementation had successes and also identified areas for improvement. Recommendations for moving forward include:

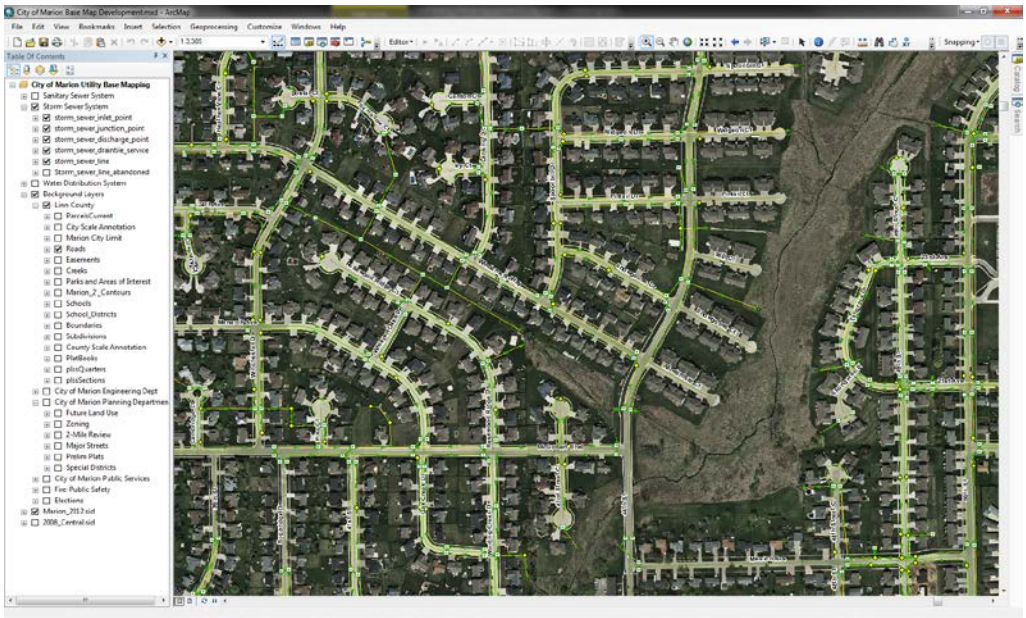
- Develop a strategic plan for the remainder of Phase I that identifies specific activities, responsible parties, and budget allocations.
- Revisit the organizational management contribution formula and encourage full participation by all ICWMA members.
- Continue progress on local policy changes that will benefit the entire watershed.
- Consider funding an ICWMA Watershed Coordinator position (dedicated or shared) that will focus on building coalitions and advancing the Plan.
- Continue to track BMPs for the annual plan review.
- Continue the water quality monitoring partnership with Coe College.
- Incorporate the GeoTREE project results into the strategic plan development and potential grant applications for implementing conservation practices.

Appendix B includes a chart of the ICWMA Organizational Management Work Plan Review and water quality monitoring results.

Part C: Illicit Discharge Detection and Elimination

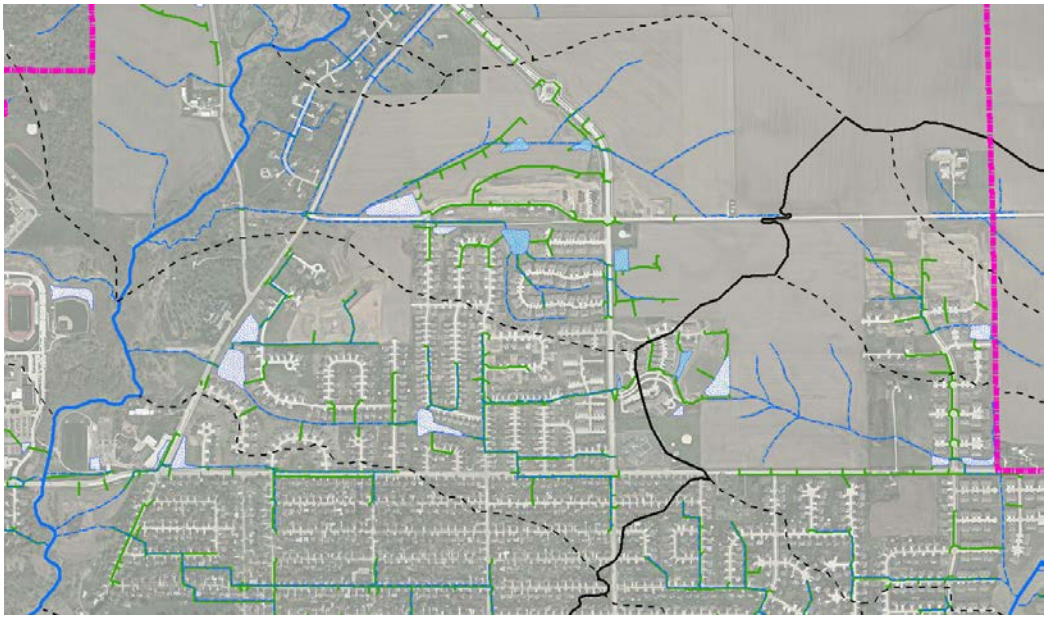
Storm Sewer System Map

The City of Marion has a complete Storm Sewer System map on our Geographic Information System. Inlets, outlets, and junctions have been shot in with survey grade GPS equipment. All storm structures in new subdivisions are added to the map as they are constructed. Reconstructed storm structures and systems are re-surveyed after the rehabilitation work is completed. Below is an example of our mapping system. Additionally, new GIS datasets are being developed that define drainageways, watersheds, sub-watersheds, and catchment areas in and upstream of Marion. This data provides both City staff and residents with a clearer picture of stormwater flows.

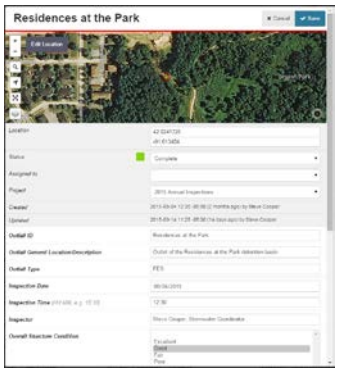


At left is the GIS Marion maintains that includes storm sewer pipes and structures as well as stormwater BMPs.

In the map at right, the solid blue lines are perennial flowing waterways, dotted blue lines are drainage ways with intermittent water, solid black lines are the borders of major watershed (Indian Creek, Squaw Creek, etc.), and dotted black lines are the boundaries of sub-watersheds.



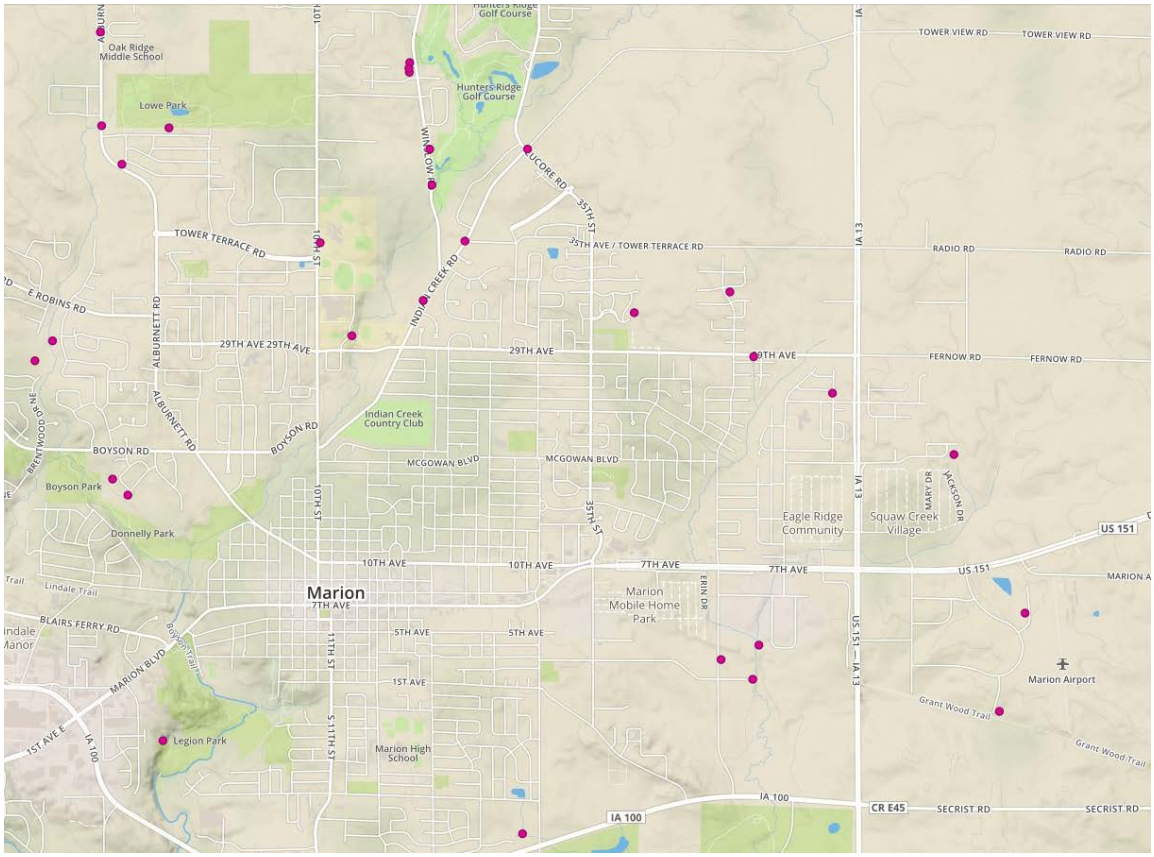
Illicit Discharge Detection and Elimination Program



The City of Marion has continued to inspect our storm sewer outfalls for any illicit discharges. As required by our current NPDES permit, this summer we inspected 31 outfalls that had active subdivisions or project sites draining to them. 2016 inspections again utilized the mobile inspection app Fulcrum and included the following information:

- Outfall name or identification
- Outfall type (flared-end section, box culvert, etc.)
- Inspection date and time
- Location description of the outfall, as well as coordinates in latitude and longitude for GIS mapping
- Is there evidence of an illicit discharge?
- Overall structure condition
- Photos documenting the conditions of the BMP

The map below shows the location of outfalls that were inspected in 2016. No illicit discharges were found. Samples of the inspection reports can be found in Appendix B.



Since last year's report no complaints or notices about potential illicit discharges have been received by the City.

Part D: Construction Site Storm Water Runoff Control

Construction Site Review and Inspection Program

The City of Marion has been requiring detailed site plans and stormwater pollution prevention plans from developers since 2005. The City does not allow developers to commence on construction projects until proper runoff control measures have been reviewed and approved by our office, and are in place out in the field.

There is a $100 fee for the Major Erosion Control Permits in place, which are defined as sites greater than 1 acre. There is a $25 fee for individual homes and small business sites less than 1 acre in size called Minor Erosion Control Permits.

The Engineering Department inspects Capital Project sites, Commercial sites, and Subdivision sites larger than one acre. One acre or less single family dwelling sites are inspected by the Building Department. Public Services, Parks, or Water Department projects too small to require a NPDES permit from IDNR are monitored by the corresponding department.

As required by the Marion's NPDES permit, the Engineering Department conducts quarterly SWPPP inspections on active construction sites in the city that hold a General Permit #2 from IDNR.

General Permit #2 information is downloaded each quarter using IDNR's online stormwater database, and spreadsheets are created for both active and expired permits. Additionally, the City of Marion now also receives email stormwater alerts from the Iowa Department of Natural Resources Stormwater Program. Owners of expired permits are contacted to inform them to renew their permits or, if their site has no construction activity and is 70% stabilized, file a Notice of Discontinuation. Owners of active permits are contacted by inspectors to notify them of the quarterly SWPPP inspection, and an appointment is made to meet on-site.

A mobile form is used for SWPPP inspections (Fulcrum) that includes:

- The project name and authorization number as stated on the GP#2 permit
- Inspection date, time and weather conditions
- Location coordinates (latitude, longitude) of inspection site
- An onsite inspection to review all the BMPs
- A review of the Owner's weekly inspection reports and SWPPP to see if they are keeping up with the required paper work as well as maintaining appropriate BMPs
- Pictures are taken to document site conditions, good or bad.
- Deficiencies found and additions required, and the date they must be corrected

When the inspection is complete, an inspection report is generated in a PDF file and includes all observed conditions, notes, and photos taken of the site. This inspection report is then sent to the permit holder, general contractor, and/or SWPPP contractor. The date, time, and method of notification is included in the report. The reports are also kept electronically on the City of Marion's network file server.

To ensure that stormwater pollution prevention practices are always in place and functioning properly, active construction sites in Marion are often visited and observed on a weekly or bi-weekly basis. If it is found during these site visits that erosion controls, sediment controls, or pollution prevention measures need to be addressed, permit holders and contractors are notified immediately.

Samples of quarterly GP#2 SWPPP inspection reports can be found in Appendix B.

Part E: Post-construction Storm Water Management

Post-construction Site Runoff Control Policy Ordinance

The City of Marion has a stormwater ordinance in the Municipal Code, effective since September of 2008. A copy of this ordinance is available upon request.

Stormwater Detention Requirements

In February 2016 the City of Marion officially adopted in full the Iowa's State Urban Design and Specifications (SUDAS) for the design of the post-construction stormwater management. The minimum post-construction stormwater detention requirements for new development are:

- The post-development Best Management Practice (BMP) must have a release rate of the 5-year pre-development peak runoff or less.
- The difference between the 5-year pre-development and 100-year post-development storm run-off must be detained on site. Again, the 5-year pre-development peak runoff amount is the maximum the post-development site can release, so the volume difference between the two storm events will be used to size the BMP.
- The one-inch rainfall over the developed site shall be detained in the basin for a minimum of 24 hours. Known as the "first-flush events", this standard will typically result in 60—80 percent of the total suspended solids being removed.

The city is also reviewing adopting the Iowa Stormwater Management Manual, with the goal of adopting and changing to these standards within the next year.

BMP Manual

The city of Marion has adopted the FAIR Approach (**F**ilter – **A**bsorb – **I**nfiltrate – **R**etain) Best Management Practice (BMP) for our community. The FAIR Approach concept focuses on retaining the one-inch rainfall event on site using different BMP independently and combined if necessary to achieve absorption of the one-inch rain. We also use and reference the new SUDAS manual for additional BMP practices which is now located at the CTRE website. We currently reference both of these manuals on our city website.

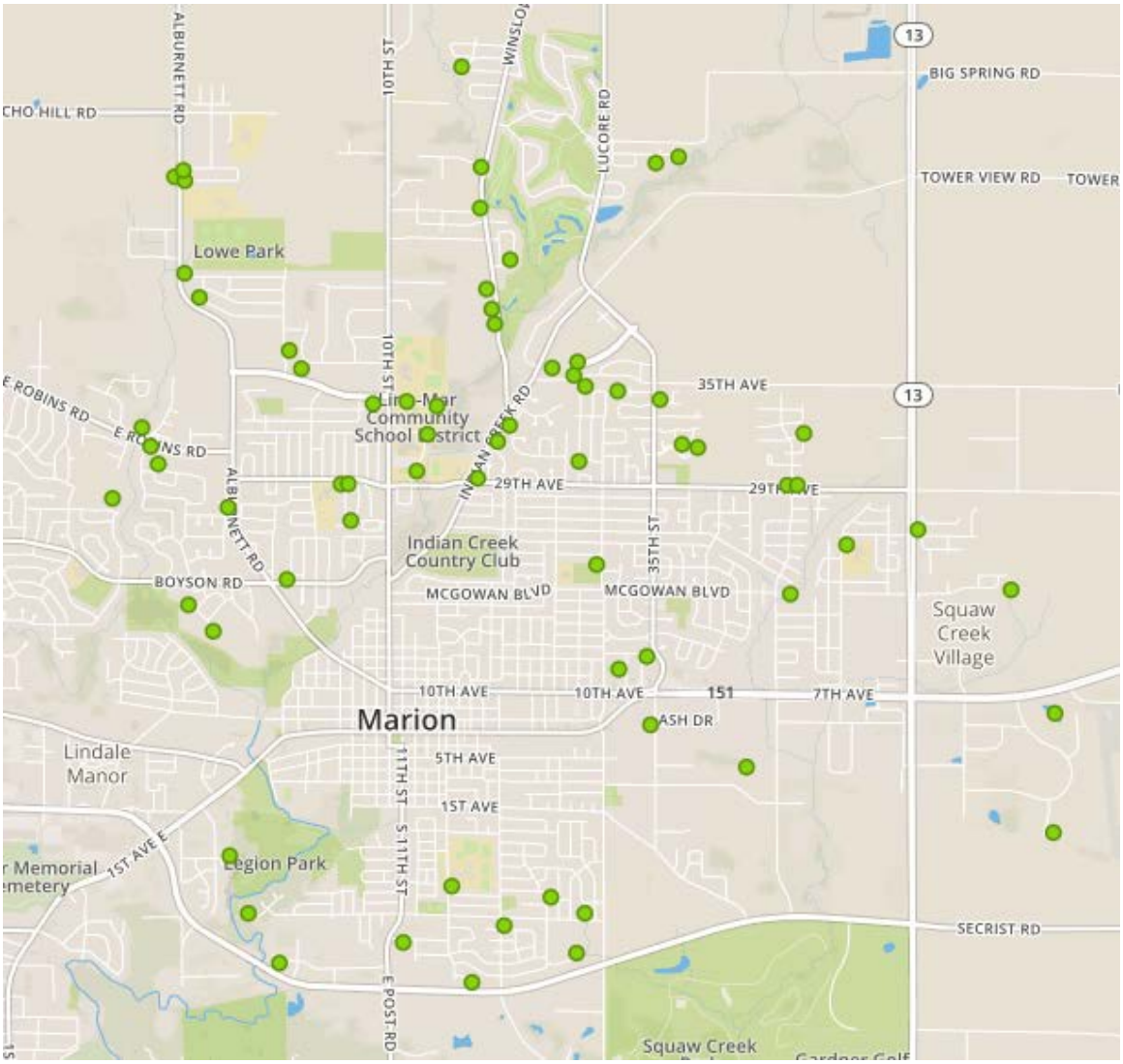
Inspections of Post-Construction Stormwater Best Management Practices

As required by our current NPDES permit, the City of Marion conducts inspections of municipal stormwater control devices and structures. Since last year's report, 70 stormwater controls and post-construction BMPs, both public and private, throughout the city. As with outfall inspections and construction site SWPPP inspections, a mobile inspection app was developed using Fulcrum. This form includes the following information:

- BMP name or identification
- BMP type (stormwater detention, retention pond, bioretention cell, etc.)

- Inspection date, time and weather conditions
- Ownership/maintenance (public or private)
- Location description of BMP, as well as coordinates in latitude and longitude for GIS mapping
- Condition of the BMP (vegetation, sedimentation, erosion, inlets, outlets, etc.)
- Photos documenting the conditions of the BMP

The map below shows the location of BMPs and stormwater control devices that were inspected in 2016. Samples of the inspection reports can be found in Appendix B.



Topsoil Requirement

The City of Marion complies with the language in the General Permit #2 that requires topsoil to be preserved unless it is not feasible to do so. Marion also adopted the State Urban Design and Specification (SUDAS) in February 2016 in its entirety. SUDAS Specification Manual Division 2: Earthwork, Section 2010: Earthwork, Subgrade, and Subbase provides details for stripping, stockpiling, and re-spreading topsoil.

Additionally, the SUDAS Design Manual provides requirements for permanent seeding and sodding in Chapter 7 - Erosion and Sediment Control: 7E-25 Sodding and 7E-24 Permanent Seeding.

Marion Engineering Department staff reviews the plans for all proposed developments and building sites, and requires owners and contractors to comply with these regulations. Plans that do not meet SUDAS or General Permit #2 requirements do not get approved.

Many developers and builders that do work in the City of Marion understand the importance of topsoil, both for stormwater management as well as for customer satisfaction, and will make sure that soils on their building sites are adequate prior to sodding or seeding.

Part F: Pollution Prevention/Good Housekeeping

Operation and Maintenance of MS4

The City of Marion continues to improve its existing infrastructure by inspecting, maintaining and cleaning all components of the city's storm sewer system. The Public Services Department does most of the minor maintenance to the system. Larger projects are designed and constructed under the direction of the Engineering Department.

Since last year's report, the Engineering Department reported replacing or installing the following quantities of storm sewers with projects:

- 13,065 l.f. of RCP storm sewer pipe, ranging from 10" to 54" in diameter.
- 231 storm sewer intakes and manholes
- 29,493 l.f. of HDPE draintile, 6" diameter

Pesticide and Fertilizer Management Program

The goal of the City of Marion's Pesticide and Fertilizer Management Program is to minimize the pollutant discharge associated with storage, application and disposal of fertilizers for municipal operations within city parks.

The City of Marion Parks Department handles and applies fertilizers. Proper training has been provided to the individuals who will be handling and applying these materials. No insecticides were used this year.

The fertilizer and chemical application rates charts and the stormwater good housekeeping inspections reports for this year are included in Appendix A.

City Facility BMPs

The City Hall site has porous pavers, bioswales, and small detention basins to treat the storm water runoff quality and reduce the quantity. In September 2013, the Parks Department removed and replaced the amended soils in many of the bioswales, which had been installed poorly when City Hall was initially constructed.

The Library overflow parking site has porous pavers and a small detention basin to treat the storm water runoff quality and reduce the quantity.

The Public Service facility has a rain garden to handle roof runoff, and has detention ponds in the back yard storage area to treat the storm runoff.

The Lowe Park A&E Building uses rain barrels and bioswales for the roof and parking lot, and has native vegetation throughout the site.

The Thomas Park Building Shop incorporated bioswales and soil amendments to improve storm water quality.

The Thomas Park splash pad discharges to a bio-swale located adjacent to a walking trail.

The new Police Department Building has numerous small detention basins to treat the storm water runoff quality and reduce the quantity.

City Facility Inspections

The following are the individual inspection reports for Public Service, Parks, and Water Department buildings. The Fire Department inspects their two fire stations daily, and formally document HAZ-MAT spills on their server. These records can be made available upon request.

Appendix A on the following pages include summaries and inspection reports from Marion's Public Services Department, Parks Department, and Water Department on their stormwater pollution prevention activities in the past year.

MARION
Engineering Department

2016 ANNUAL STORMWATER REPORT

APPENDIX A

- Public Services Department Pollution Prevention/Good Housekeeping Inspections
- Parks Department Pollution Prevention/Good Housekeeping Inspections
- Water Department Pollution Prevention/Good Housekeeping Inspections

City of Marion Public Services Department Work Program for 2016

Street Maintenance Work Schedule for 2016

Street maintenance activities is the largest division within the Public Services Department. Maintenance activities have evolved to four maintenance crews (two street maintenance crews, traffic crew, and ROW maintenance). A fifth maintenance crew will be required for street maintenance activities that will include curb and gutter reconstruction. Significant growth including annexations, new developments, and construction of major roadways has resulted in a dramatic increase in maintenance responsibilities. Public Services will continue to expand the scope and level of services that is currently provided.

Right of Way Maintenance – Right of way maintenance begins in the spring with the cleanup of heavy sand deposits on the right of ways of the designated snow routes. Mechanical brooms are used to clean sand deposits that are within the street and on the right of way areas. Personnel also collect debris and litter along the ROW in the spring as part of the continuing adopt a roadway beautification project. Street sweeping continues throughout the year into the residential areas.

Designated Maintenance Routes (ROW Cleanup)

Designated Maintenance Routes (Sweeping)

Location	*Date Completed*	*Comments*
Pink Maintenance Route		
Green Maintenance Route		
Orange Maintenance Route		
Purple Maintenance Route		
Yellow Maintenance Route		
Red Maintenance Route		
Brown Maintenance Route		
Blue Maintenance Route		
Silver Maintenance Route		
Black Maintenance Route		

Intersection Sweeping

Location	*Date Completed*
Parkview & West 9th Avenue/Donnelly Drive	
Parkview & Alpine/Elm/ Terrace	
South 15th Street & 3rd Avenue/2nd Avenue	

Median Cleaning

Location	*Date Completed*
HWY. 151	
7th Avenue @ 35th Street	
Central Business District	
Marion Blvd.	
East Post Road	
Twix Town Rd.	
Lindale & Blairsferry	
Hwy 100 & Munier Rd.	
31st Street (8th Ave/McGowan)	

Designated Maintenance Routes (Sweeping)

Location	*Date Completed*
Pink Maintenance Route	
Green Maintenance Route	
Orange Maintenance Route	
Purple Maintenance Route	
Yellow Maintenance Route	
Red Maintenance Route	
Brown Maintenance Route	
Blue Maintenance Route	
Silver Maintenance Route	
Black Maintenance Route	

Secondary Roadways Sweeping

Commerical Districts	*Date Completed*
C. B. D. Area – 6TH Ave. to 11TH Ave. & from 9TH St. to 14TH St.	
Menard Ln & Oak Ln	
Lyons Ln.	
Katz Dr. & P.D.	
Industrial Dr. – 3RD & 4TH Ave. east of 35TH St.	
Commercial & Industrial area – off of 44TH St. & 50TH St.	
Wal-Mart frontage road	
Commercial area east of Hwy 13 – (Whole Sale Feeds)	
Cardinal & Linden Dr. (Fareway)	
Chandler Ct. (off 50th St.)	
REC Dr. (Hwy 13 access)	
Residential Areas	
16TH & 18TH St. from 3RD to 5TH Ave.	
20th St. from 3rd Ave. to 5th Ave.	
3RD & 4TH St. from 3RD to 6TH Ave.	
19TH St. 5TH to 7TH Ave.	
1st Ave. – 8th St. to 11th St.	
S.5th St. – S. 6th St. loop	
S. 12th St. – A Ave. to Grand	
Pepperwood Area	
Keyes Ct. & Ridge Dr./Southview Areas	
Linnwood Knolls Area	
Tama St. (off Hwy100)	
2ND , 3RD , 6TH, 7TH , 8TH St. – From 7TH TO 8TH Ave.	
FIRST 100' OF 4TH, 5TH 6TH , 7TH St. North of 29TH Ave.	
Partridge – Larick Dr. to Alburnett Rd.	
7TH 8TH 9TH St. North of Central	
17TH & 18TH St. North OF 10TH Ave	
Edgebrook Dr.	
26th St. from McGowan to 24th Ave.	
24th Ave. – 26th St. to 31st St.	
31st St. – north of 29th Ave.	

Residential Sweeping Areas

Location	*Date Completed*	*Location*	*Date Completed*
Green District 1		**Purple District 3**	
Green District 2		**Purple District 4**	
Green District 3		**Purple District 5**	
Green District 4		**Blue District 1**	
Yellow District 1		**Blue District 2**	

Yellow District 2		**Blue District 3**	
Yellow District 3		**Gold District 1**	
Purple District 1		**Gold District 2**	
Purple District 2		**Gold District 3**	

<u>Grading</u>- Grading operations includes roadway and shoulder maintenance. A majority of work is accomplished twice a year which is usually in the spring and in the fall. Operations during the summer include incidental roadway grading and dust control applications.

a. Roadway

Location	*Date Completed*
6th Ave. gravel – 27th St. to 30th St.	
6th Ave. – 19th St. to 13th St.	
Fernow Rd. – east to city limits	
Rock turn-a-rounds as needed, Solid Waste will inspect	

b. Shoulders

Location	*Date Completed*
HWY 151 – 35th St. to HWY 13	
10th St. – Bridge to city limits	
29th Ave. – Primrose to Alburnett Rd.	
Alburnett Rd. – Bridge to city limits	
Boyson Rd. – Alburnett Rd. to city limits	
S. 11th St. /East Post Rd. – Meadowview Dr. to Hickory Ln.	
Munier Rd. – HWY 100 to 31st St.	
Indian Creek Rd. – 29th Ave. to Lucore Rd.	
Lucore Rd. – Indian Creek Rd. to city limits	
Winslow Rd. – Indian Creek Rd. to 2nd bridge	

c. Dust Control

Location	*Date Completed*
6th Ave. gravel – 27th St. to 30th St.	
6th Ave. – 19th St. to 13th St.	
Fernow Rd. – east to city limits	
Rock turn-a-rounds as needed, Solid Waste will inspect	

<u>Cold Patching</u>- Cold patching involves utilizing a cold asphalt mix to fill potholes. During the spring thaw and after significant rainfall events, older pavements can show significant deterioration where pothole filling becomes a vital necessity.

Designated Maintenance Routes

Location	*Date Completed*
Pink Maintenance Route	
Green Maintenance Route	
Orange Maintenance Route	
Purple Maintenance Route	
Yellow Maintenance Route	
Red Maintenance Route	
Brown Maintenance Route	
Blue Maintenance Route	
Black Maintenance Route	
Silver Maintenance Route	

Residential Areas

Location	*Date Completed*	*Location*	*Date Completed*
Green District 1		**Purple District 3**	
Green District 2		**Purple District 4**	
Green District 3		**Purple District 5**	
Green District 4		**Blue District 1**	
Yellow District 1		**Blue District 2**	
Yellow District 2		**Blue District 3**	
Yellow District 3		**Gold District 1**	
Purple District 1		**Gold District 2**	
Purple District 2		**Gold District 3**	

Asphalt Maintenance Work Schedule

The asphalt maintenance work schedule is comprised of various locations that require minor to major patchwork. Public Service will perform some overlay projects, but the general focus of activities is on pavement maintenance. The pavement maintenance schedule is based upon the immediate maintenance needs throughout the city. As pavement conditions change throughout the year, so will the maintenance schedule to reflect priority repairs. Additional patchwork is scheduled contingent upon time and available resources.

Location		***Date Completed***
3900 block Shady Oak Lane	**Misc. Patchwork**	
1000 block Rolling Glen Drive	**Misc. Patchwork**	
40th Street Drive	**Misc. Patchwork (include with drain tile project)**	
1000 block 6th Street-South	**HMA Mill and Overlay**	
Secrist Road	**Full Depth HMA-(Pending Project Agreement)**	
1100 Block of A Avenue East	**Misc. HMA Patchwork**	
24th Street-2400 to 2500 block	**Mill and HMA**	
14th Avenue-900 to 800 block	**Surface Patch and HMA**	
15th Avenue-900 to 800 block	**Surface Patch and HMA**	
West Municipal Parking Lot-900 block	**Full Depth HMA**	
Katz Drive	**Full Depth HMA**	
700 block 8th Street	**HMA Mill and Overlay**	
12th Street- 1400 block North	**HMA-Overlay Turn Around**	

PCC Maintenance Work Schedule

The concrete maintenance work schedule is comprised of various full depth concrete that is based upon the immediate pavement maintenance needs throughout the city. As pavement conditions change throughout the year, so will the maintenance schedule to accommodate priority repairs.

Location		***Date Completed***
4th Street and 10th Avenue	**Full Depth Concrete Patchwork**	
Katz Drive	**Curb and Gutter**	
3300 Block 29th Avenue-East	**Misc. Full Depth Patchwork**	
1000 block 14th Street-South	**Misc. Full Depth Patchwork**	
A Avenue 2200 block-East	**Full Depth Patchwork**	
2nd Avenue-1600 block	**Misc. Full Depth Patchwork**	
24th Street-2500 block	**Full Depth Patchwork**	
Salem Circle	**Misc. Full Depth Patchwork**	
Linn Mar Court	**Full Depth Patchwork**	

Joint Sealing

Joint sealing are preventative maintenance activities that are conducted by the Department every spring and summer season. Joint sealing includes the sealing of reflective cracks and joints on the both PCC and HMA roadways.

Location	*Date Completed*
Munier Road-Hwy 100 to 31st Street	
Partners Avenue	
Enterprise Drive	
Brockman-1000-2400 block	
18th Street-300-500 block	
Grand Avenue-2200 block east	
2015 PCC Work Program	
5200 block Kacena Avenue	
1000 block 50th Street	
955 31st Street	
900 block 14th Street	
2025 8th Avenue	
2500 block Indian Creek Road	
100 block 35th Street	
2200-2300 block Addalyn Drive	
2200 block Hillview	
2540 Grand Avenue	
4th Avenue and 8th Street	
4th Avenue and 10th Street	
2370 Geode Street	
Edinburgh and Plymouth	
490 33rd Avenue	
2900 Block Hunters Ridge Road	
Brockman and 26th Street	
5th Avenue and 13th Street	
5th Avenue and 20th Street	
Additional locations to be added as deemed necessary.	

Traffic Maintenance Work Schedule for 2016

The Traffic Maintenance activities include the maintenance of all traffic control devices include pavement markings, street signs, traffic signal operations, and miscellaneous utilities.

Underground Utilities Locating-Public Service is responsible for locating underground utilities associated with the city's traffic signal systems, fiber optics, and electrical circuits for city owned street lighting. During spring and summer, over thirty to forty locate requests are reviewed for facility conflicts.

Intelligent Transportation Systems Integration

Fiber Optic Installations- Public Service is continually expanding the fiber optic infrastructure to additionally city assets in an effort to increase efficiency. New partnerships with communication companies will be developed this year that will result in significant revenue generation and new opportunities for growth in capabilities in information technology.

Systems/Network Integration-Public Service will continue to integrate signalized intersections to the intelligent transportation system. New systems will be initiated that will allow departments to utilize the certain ITS functions including video server capabilities as well as the public wi-fi project.

Traffic Marking Maintenance

Line Painting and Striping-Line painting is accomplished with specialized equipment that requires personnel to match up existing traffic markings with a platform mounted paint carriage. Line striping is performed two to three times throughout the year.

Legend and Crosswalk Painting-Multiple crews are responsible for painting the crosswalks and legends throughout the city. Pavement markings require a significant amount of maintenance and many locations are painted two to three times a year. A new high build traffic marking paint will be tested this year in an effort to reduce maintenance and increase product performance. Almost two thousand gallons of paint are utilized for traffic marking maintenance.

Event Traffic Control

Event Staging-Public Service provides traffic and parking control for various events throughout the season. Within one year anywhere from twenty to thirty events will require traffic control.

Traffic Signal Maintenance

Cabinet Inspections and Cleaning-Twice a year Public Service cleans and inspect every traffic signal control cabinet within the city (34 locations). All equipment and controls are clean, tested, and documented to insure proper working condition. Traffic signal structures including poles, footing, and signal housings are inspected for any structural deficiencies.

Cabinet Location	***Date Completed***	***Comments***
Hwy 151 and 13		
Hwy 13 and Linn-Aire		
Hwy 13 and Hwy 100		
Hwy 151 and Eastview		
Hwy 151 and 44th Street		
Hwy 151 and Katz Dr. (East)		
Hwy 151 and Katz Dr. (West)		
Hwy 151 and 35th Street		
7th Avenue and 31st Street		
7th Avenue and 19th Street		
7th Avenue and 13th Street		
7th Avenue and 12th Street		
7th Avenue and 10th Street		
7th Avenue and 7th Street		
6th Avenue and 10th Street		
8th Avenue and 10th Street		
8th Avenue and 6th Street*		**Pilot Program-Reflective Back Panels**
S. 11th Street and F Avenue		
S. 11th Street and Grand Avenue		
S. 22nd Street and Hwy 100		
East Post and Hwy 100		
Hwy 100 and Oak Ln.		
Hwy 100 and Menards Ln.		
Hwy 100 and Tama Street.		
Marion Blvd and Armar		
Marion Blvd and Blairsferry		
Marion Blvd and 1st Street		
Blairsferry Rd. and Lindale		
Blairsferry and Northland		
10th Street and Central Ave		
Indian Creek Road and 10th Street		
10th Street and 29th Avenue		
10th Street and 33rd Avenue		
Alburnett and Boyson Road		

V. Sign Replacement Program

Sign Reflectivity and Replacement Program- New federal requirements will significantly impact the current sign maintenance program. Public Service will now be required to incorporate a sign reflectivity and replacement program. In addition, inventory and gis tracking will be incorporated to provide updated asset tracking. The sign reflectivity program will also incorporate new standards of pole and sign maintenance which will allow for uniform approach to the sign replacement program

Priority Maintenance Route

Location	***Date Completed***	***Comments***
Pink Maintenance Route		
Green Maintenance Route		
Orange Maintenance Route		
Purple Maintenance Route		
Yellow Maintenance Route		
Red Maintenance Route		
Brown Maintenance Route		
Blue Maintenance Route		
Silver Maintenance Route		
Black Maintenance Route		

Residential Maintenance Route

Location	***Date Completed***	***Location***	***Date Completed***
Green District 1		**Purple District 3**	
Green District 2		**Purple District 4**	
Green District 3		**Purple District 5**	
Green District 4		**Blue District 1**	
Yellow District 1		**Blue District 2**	
Yellow District 2		**Blue District 3**	
Yellow District 3		**Gold District 1**	
Purple District 1		**Gold District 2**	
Purple District 2		**Gold District 3**	

Sewer Maintenance Work Schedule for 2016

Sewer Rental fund maintains the sanitary sewer and storm water infrastructure that includes cleaning of sanitary mains and repairs of the sanitary sewer infrastructure. Additional responsibilities include the repair and maintenance of storm water intakes, storm water lines, and drainage mitigation projects. The division is also responsible for the maintenance of waterways and floodplain areas.

Storm Water Maintenance Program

Catch Basin Cleaning and Inspections- Activity will include visual inspections, visual repairs, and cleaning of catch basins.

Designated Maintenance Routes

Location	*Date Completed*	*Comments*
Pink Maintenance Route		
Green Maintenance Route		
Orange Maintenance Route		
Purple Maintenance Route		
Yellow Maintenance Route		
Red Maintenance Route		
Brown Maintenance Route		
Blue Maintenance Route		
Black Maintenance Route		
Silver Maintenance Route		

Residential Areas

Location	*Date Completed*	*Location*	*Date Completed*
Green District 1		**Purple District 3**	
Green District 2		**Purple District 4**	
Green District 3		**Purple District 5**	
Green District 4		**Blue District 1**	
Yellow District 1		**Blue District 2**	
Yellow District 2		**Blue District 3**	
Yellow District 3		**Gold District 1**	
Purple District 1		**Gold District 2**	
Purple District 2		**Gold District 3**	

Detention Basin Maintenance- Activities include annual inspections, cleaning of basins, grading, and mowing.

Detention Basin Maintenance	Inspection Date	Mowing	Comments
2016			
35th St/Sunburst Ave			
31st St/Abby Rd			
31St St/Sunburst Ave			
Larick Ditches			
Echo Hill Rd/Bellboy Dr			
Hillcrest Ct			
Meadow View / East Post Rd			
S. 26th St/Meadow Ridge Blvd			
44th St Wetlands Area			
S. 22nd St/Edgewood Ct			
Partridge Ct.			
Lennon Lane			
Chestnut Lane*			

Drain Tile Installations

Location	Date Completed
3400 Block Monarch 1060 Westview 795 Stonefield 3180 9th Street. (Around 100 lft. Of tile) Storm to the south of this address 2077 10th Ave. (Storm on 22nd Street) 605 8th Ave. (Line on the Westside of the house) 3180 9th Street. (Line is in front of homeowners house) 1080 West view. (Line is on South 11th Street) 2140 Grand Ave. (Line on 22nd street one lot) 3105 26th Ave. (Line on the Westside of the house) 101 21st Street. (Line on 21st Street.) Rental house. 2135 Pleasant view drive . (Line around the corner on South 22nd Street) 815 South 14th Street. (North side of home) 1165 South 15th Street. (Storm on the south side of house.) 2077 10th Ave. Storm on 22nd street. About 130 lft 3110 to 3260 24th Ave.	

Catch Basin Repairs and Reconstructions

Location	Date Completed
New lid at 2nd Ave and 10th Street. Top broken of 805 50th Street 966 10th Ave 1525 Hillcrest ct. 1260 Meadowview 2790 Newcastle Storm inlet at Edinburgh and Alburnett (Concrete around casting) Hunters ridge road and Stone Ct. (Concrete around casting) 95 Grand Ave Curb to storm sewer. 4100 Deervalley Three storm inlets 4100 Deer Valley. Built storm sewer behind house and run new pipe down the hill. 2615 Larick drive. No inlets at this area. Look to see if we can put in two inlets one on each side of the road. 33 inch pipe. 3490 Monarch Ave Throat broken 2960 Storm casting broken 40th Street and Charter oak. Whole storm needs rebuilt 825 26th Street. Throat broken 10th Street and Brockman. North east needs rebuilt 1750 5th Ave. Concrete around lid broken Alpine and West 14th Broken collar 2255 Timber creek drive Broken collar 2355 A-Ave. Both sides of road. 50th Street and Hwy 151. Storm sewer that comes into the culvert on 151. Center of roads.	

Sanitary Box-out Maintenance

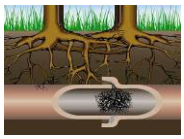
2850 Hunters ridge road	
2770 Hunters ridge road	
1025 25th Street	
30th Street and 12th Ave	
31st Street and Hwy 100 (South side off Hwy 100) Bring up to road.	
300 West 8th Ave. Get concrete out of pipe.	
50th Street and 8th Ave. (Bring manhole to ground level)	
2810 Winchester Drive	
4100 Deer valley (One box out and three storm sewer inlets)	
300 West 8th Ave. Concrete in the outlet side of Sanitary	
James Drive and Henderson U-mar ring leaking. Manhole in road flow line.	
1595 17th Ave. Behind house manhole needs to be ground level.	
2955 Downling Street	
670 Meadow ridge	
3rd Ave and 20th Street	

High Treatment Areas (Also include monthly and by-monthly flushing)

1. Blair-Ferry. Lindale to Marion Blvd 8 inch line
2. North of Central. 7th Street to 10th Street. 12 inch line.
3. 5th Ave. 3rd to 4th Street. 8 inch line.
4. Willow Park and 10th Ave. North east to Central and 5th Street. 15 inch
5. 2nd Street and 7th Ave. North to 9th Ave. 15 inch line.
6. Behind the Water dept. By the R#R hill. East to 2nd street. 15 inch line.
7. 3rd Ave and 1st Street. North. To north side of 7th Ave. 15 inch line
8. 29th Ave. 1st to 10th Street. East. 8 inch line.
9. 10th Street and 29th Ave. South. 8 inch. To Bentley.
10. 14th Ave and North view. East. 8 inch To 24th Street.
11. Charter oak and West over. 12 inch. South to 40th Street
12. 875 South 14th Street. Line is behind the house. Rinse down then run the line from 14th Street. 8 inch
13. 1200 Meadowview. North to Grand Ave and 11th Street. 8 inch line. Need to let 1065 South 11th Street know when we are going to flush this line the day before.
14. South 8th Street and Grand Ave. East to South 11th Street. 12 inch line
15. South 8th Street and Hill view. South to Grand Ave. 12 inch line.
16. 300 Hill view to 800 Hill view. 12 inch line.
17. 860 Krumboltz to the south. 8 inch.

Annual Treatment Areas (Yearly Flushing)

1. Munier road to 151. 31st to Hwy 13. (35,000 lft.)
2. 40th Street to Westover. Glenbrook to Charter oak.(7,500 lft)
3. 10th Ave to McGowen. 10th Street to 31st Street.(52,000)
4. 7th Ave to 10th Ave. 10th Street to 31st Street (24,000 lft)
5. Lindale to West 14th Ave. Dry creek to Parkview.(19,100 lft)
6. 8th Ave to 17th Ave. 2nd Street to 10th Street. (22,700)



Sanitary Root Treatment

1. 2750 28th Ave .East 300 foot. 8 inch line. (ROOT SAW)
2. 9th Street. 11th to 14th Ave. North. 430 lft. 6 inch line. (ROTOR)
3. 16th Street and McGowan. East. 300 lft. 8 inch line.(Chain Cutter)
4. 12th Ave and 12th Street. South . 300 lft. 10 inch line. (Chain Cutter)
5. 1200 Country Club Drive. East. 300 lft. 8 inch line. (Chain Cutter)
6. West 9th . Linnview to Lindale. 8 inch line. 1500 lft. (Chain Cutter)
7. Alpine and West 14th Ave. 8 inch line. 600 lft. (Chain Cutter)
8. 1150 Linnview . East. 8 inch line. 300 lft. (Chain Cutter)
9. 905 South 6th Street. South. 8 inch line. 300 lft. (Chain Cutter)
10. 1385 7th Street. South. 6 inch. 400lft. (Rotor)
11. 9th Ave and 8th Street. South. 6 inch line. 150 lft. (Rotor)
12. 8th Ave and 7th Street. East. 8 inch line. 900 lft. (Root Saw)
13. Ridge Drive and Ridge Ct. North. 8 inch line. 300 lft (Chain Cutter)
14. 437 16th Street. South. 8 inch line. 300 lft. (Chain Cutter)
15. A- Ave and 14th Street. North. 8 inch line. 300 lft. (Chain Cutter)
16. 1210 Starry. East. 8 inch line. 400 lft (Chain Cutter)
17. 420 Grand. West. 8 inch line. 300 lft. (Chain Cutter)

18. Valley View and South 5th. South. 8 inch line. 300 lft. (Chain Cutter)

19. 1150 Maple crest. South. 8 inch line. 200 lft. (Root Saw)

20. 1130 Washington. South. 8 inch line. 300 lft. (Chain Cutter)

21. 12th Ave and Lincoln. South. 6 inch line. 300 lft. (Rotor)

22. 1330 Lincoln. South. 8 inch line. 300 lft. (Chain Cutter)

23. 1925 Douglas. North. 8 inch line. 400 lft. (Chain Cutter)

24. 1615 Henderson. West. 8 inch line. 400 lft. (Rotor)

C. Infiltration and Inflow Inspections Programs- Designated program to locate infiltration and inflow issues within the sanitary sewer infrastructure. Program includes televised inspections, smoke and dye testing, and visual inspections of the sanitary sewer infrastructure.

Smoke and Dye Testing- Multiple locations are scheduled for cross connection inspections. Smoke testing will be conducted in multiple locations to determine inflow or infiltration issues.

Smoke Testing

Location	Date Completed
12th Street to 14th Street. Starry to G Ave. About 130 homes. 1st Ave to 3rd Ave. 7th Street to 10th Street. About 35 homes.	

Televising-The primary method for infiltration identification is through televised inspection. Designated locations for televised inspection of sanitary sewer lines to determine condition of facilities. Offset joints, issues with lateral connections, and significant inflows are documented and recorded.

<u>Sanitary Trunk Line Inspection</u>- Activities include inspections and confirmation of secure lids; exposed lines to waterways; identification markers; sanitary facilities damage.

Location	Date Completed	Comments
Squaw Creek- North and South Trunk lines		
Indian creek- North and South Trunk lines		
Dry Creek lines, From West 8th Ave to Dry creek lane.		
East Robins, From New Castle to Echo hill		
Hunters Ridge line. From Brookside to Valentine Circle		
49th Street and 6th Ave. To the east. Two lines north side of R&R and south of R&R to 62nd Street.		
From 660 49th Street to the NE to Jackson street in trailer court east of hwy 13.		
Line from 29th Ave and 44th Street to the west 900 feet and then to the north and west		
Line from Winslow road and Tower Terrace to the east to Laurel lane.		
Line from 3450 Indian creek road to the west to north of 3rd street and Barrington		

III. Floodplain and Waterway Maintenance-includes annual preventative and responsive maintenance activities within the floodplain that will encompass Storm Water Channel Maintenance, Erosion Control and Bank Stabilization, Floodplain Utility Maintenance, and some limited Land management. Specific areas of floodplain maintenance activities are primarily focused directly within the stream channels. Maintaining the maximum hydraulic flow and minimizing streamline debris buildup. Erosion Control along the stream banks and maintenance requirements with the sanitary sewer systems has been steadily increasing.
Land management within the flood plain is kept to a minimum due to the fact that there is a mix of wetlands, grasslands, and dedicated park land that requires little maintenance from Public Services.

a. Storm Water Channel Maintenance-
Current floodplain maintenance activities include debris removal and streamline bank stabilization. flow. Clearing of streamline channels occurs annually in the fall and winter months. Maintenance personnel are also required to remove beaver dams throughout the year in minor storm water channels. In addition to stream channel cleaning, removal of sediment and silt within culverts and storm water lines typically requires annual attention. Cleaning of these storm water systems is required at least every two years.

b. Erosion Control
Maintenance activities within the stream channels also include erosion control along streamline banks. Erosion control is necessary to preserve not only the existing characteristics of the streamline channel, but every effort is made to maximize hydraulic flow capability by minimizing erosion and the potential for tree loss along streamlines.

c. Land Management
The current policies of Public Service is to restrict the level of use for floodplain areas that are owned and maintained by the city. Much of the existing floodplain is currently dedicated grass or wetlands that require little maintenance. Public Services will continue to post dedicated green space signs in identified areas.

Solid Waste Work Schedule for 2016

Solid Waste operations include curbside refuse and recycling operations, yard waste collection and processing, and bulk item pickup. Curbside collection routes will be expanding from four to five routes to support the expansion of residential growth. The yard waste processing facility has grown substantially due to the internet in compost materials. The recycle drop off center will also be expanded to allow for additional materials.

I . Curbside Collections- Includes daily curbside collection. Currently, routes are ranging well over five hundred houses each with total recycle and refuse collection around seven tons for each route. Four permanent routes may be required for each day of the week.

a. Review and Revise Routing- This will include conducting collection counts to monitor routes. Continue to organize and expand upon existing collection routes.

b. **Route Inspections**-Conduct biweekly inspections of collections routes to determine excessive violations.

c. Bulk Item Collections-Public Service will continue with bulk item collections. On average, fifteen to twenty collections are scheduled for each week.

Yard Waste Collection and Processing

Public Service will continue to process yard waste including compost, wood chips, and ground brush. One to two operators continue processing throughout the year. Everything that is processed is either sold to commercial vendors or landscape companies. Solid waste fee paying citizens have access to as much compost as they can utilize…for free.

III. Recycling Center Operations

Public Service will continue to operate the recycling drop off center. Within the next year, services for the drop off recycle center will continue to expand allowing for additional items to be recycled.

MS-4 Pollution Prevention Good Housekeeping Program

Annual Stormwater Site Inspection Form: Public Works Facilities

Name of Facility: MAIND FACILITY INSPECTION **Date:** 11-5-15 **Time:** 8:30am

Inspector Name: RMiller **Signature:** _____

Please check one of the following: X Dry Weather Inspection ☐ **Wet Weather Inspection**

Area/Equipment/BMP Inspected	Observations	Actions Taken
OIL ROOM	NO LEAKS CLEAN	NO ACTION TAKEN
FUEL CABINETS	NO SPILLS OR LEAKS	NO ACTION TAKEN
TRAFFIC MARKING PAINT STORAGE	NO SPILLS NO LEAKS	NO ACTION TAKEN
EQUIPMENT INSPECTION	SOME MINOR OIL (HYDRAULIC) SPILLS ON FLOOR	PART OF WEEKLY SHOP AND FLOOR CLEANING. EQUIPMENT REPAIRS REPORTED AND ADDRESSED
FLEET MAINTENANCE FACILITES	MINOR OIL SPILLS-CONTAINED INSIDE.	PART OF WEEKLY SHOP AND FLOOR CLEANING. SIGNIFICANT OILS SPOTS ARE CLEANED IMMEDIATELY
WASH BAY FACILITES	WASH BAYS CLEAN	NO ACTION TAKEN.
ON SITE STORM WATER FACILITES	WATERWAYS CLEAR	DEBRIS COLLECTION

MS-4 Pollution Prevention Good Housekeeping Program

Annual Stormwater Site Inspection Form: Public Works Facilities

Name of Facility: MAIND FACILITY INSPECTION **Date:** 4-4-16 **Time:** 8:30am

Inspector Name: RMiller **Signature:** _____

Please check one of the following: X Dry Weather Inspection ☐ **Wet Weather Inspection**

Area/Equipment/BMP Inspected	Observations	Actions Taken
OIL ROOM	NO LEAKS CLEAN	NO ACTION TAKEN
FUEL CABINETS	NO SPILLS OR LEAKS	NO ACTION TAKEN
TRAFFIC MARKING PAINT STORAGE	NO SPILLS NO LEAKS	NO ACTION TAKEN
EQUIPMENT INSPECTION	SOME MINOR OIL (HYDRAULIC) SPILLS ON FLOOR	PART OF WEEKLY SHOP AND FLOOR CLEANING. EQUIPMENT REPAIRS REPORTED AND ADDRESSED
FLEET MAINTENANCE FACILITES	MINOR OIL SPILLS-CONTAINED INSIDE.	PART OF WEEKLY SHOP AND FLOOR CLEANING. SIGNIFICANT OILS SPOTS ARE CLEANED IMMEDIATELY
WASH BAY FACILITES	WASH BAYS CLEAN	NO ACTION TAKEN.
ON SITE STORM WATER FACILITES	WATERWAYS CLEAR	DEBRIS COLLECTION

MS-4 Pollution Prevention Good Housekeeping Program

Annual Stormwater Site Inspection Form: Public Works Facilities

Name of Facility: Winter Deicer Facilities **Date:** 4-4-16 **Time:** 10:00am

Inspector Name: RMiller **Signature:** _____

Please check one of the following: X **Dry Weather Inspection** ☐ **Wet Weather Inspection**

Area/Equipment/BMP Inspected	Observations	Actions Taken
Brine Production Facility	Storage tanks empty Brine tank-needs cleaning Leaks no-leaching outside	Cleaned all brine facilities. Drained all storage tanks. Repaired leaks
Bulk Salt Storage Facilities	Some leaching-nothing outside of building	Cleaned facility Restocked winter deicers

MS-4 Pollution Prevention Good Housekeeping Program

Annual Stormwater Site Inspection Form: Public Works Facilities

Name of Facility: Winter Deicer Facilities **Date:** 11-5-15 **Time:** 11:00am

Inspector Name: RMiller **Signature:** _____

Please check one of the following: X Dry Weather Inspection ☐ **Wet Weather Inspection**

Area/Equipment/BMP Inspected	Observations	Actions Taken
Brine Production Facility	Storage tanks empty Brine tank empty No leaks noted	Facilities
Bulk Salt Storage Facilities		Cleaned facility Restocked winter deicers

MS-4 Pollution Prevention Good Housekeeping Program

Annual Stormwater Site Inspection Form: Public Works Facilities

Name of Facility: COMPOST AREA **Date:** 11-5-16 **Time:** 1:00PM

Inspector Name: RMiller **Signature:** _____

Please check one of the following: X **Dry Weather Inspection** ☐ **Wet Weather Inspection**

Area/Equipment/BMP Inspected	Observations	Actions Taken
YARD WASTE FACILITY	COMPOST FACILITY IS CONTAINED NO LEACHING OF ORGANIC MATERIALS IN WATERWAYS	

MS-4 Pollution Prevention Good Housekeeping Program

Annual Stormwater Site Inspection Form: Public Works Facilities

Name of Facility: COMPOST AREA **Date:** 4-4-16 **Time:** 11:00am

Inspector Name: RMiller **Signature:** _____

Please check one of the following: X Dry Weather Inspection ☐ **Wet Weather Inspection**

Area/Equipment/BMP Inspected	Observations	Actions Taken
YARD WASTE FACILITY	COMPOST FACILITY IS CONTAINED NO LEACHING OF ORGANIC MATERIALS IN WATERWAYS	

LOWE PARK BALL FIELDS (12 ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sport Mix								
Pro Turf								
CHEMICALS								
Trimec Plus		3gals 2%						
Focus 15 G								
Organic 5-2-0								
Dimension								
Merit 0.5								
IRRIGATION								
Monthly average								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

LOWE PARK - FOOTBALL FIELD (4 ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
Focus 15 G								
Organic 5-2-0								
Dimension								
Merit 0.5								
IRRIGATION								
Monthly average								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

LOWE PARK -SOCCER FIELDS/FOOTBALL (10ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
50/50 Pace Mix								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
Focus 15 G								
Organic 5-2-0								
Dimension								
Merit 0.5								
IRRIGATION								
Monthly average								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

LOWE PARK A&E CENTER 5.3 ACRES								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER 20-0-5 Demension .1		100lbs						2 bags
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus		1.5 gal				1.5 gal		
CONDITIONING								
Aeration								
Topdress mix								
Turface								

PIERCE 100,0000 SQ. FT. (2 ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus		120gal 1%						
CONDITIONING								
Aeration								
Topdress mix								
Turface								

THOMAS PARK NEW BUILDING 75,000 sq.ft.								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER 20-0-5 Demension .1		100lbs						2 bags
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus		1 gal 1%						
Focus 15 G								
Organic 5-2-0								
Dimension								
IRRIGATION								
Monthly average								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

GILL 50,000 SQ.FT. (1 ACRE)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	per bag
FERTILIZER									
SEED									
Athletic Interseed									
Pace Sporst Mix									
Pro Turf									
CHEMICALS									
Trimec Plus		.5 gal 1%							
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

CITY PARK 45,000 SQ. FT. (1 ACRE)								quanity	Cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	
FERTILIZER 20-0-5 Demension .1		75lbs.						1.5 bags	
SEED									
Pace 50/50									
Dense shade mix									
Pro Turf									
CHEMICALS									
Trimec Plus		.25 gal 1%							
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

LIBRARY 15,000 SQ. FT.								quanity	Cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	
FERTILIZER 20-0-5 Demension .1		75lbs						1.5 bags	
SEED									
Athletic Interseed									
Pace 50/50									
Pro Turf									
CHEMICALS									
Trimec Plus		.15 gal 1%							
Focus 15 G									
Organic 5-2-0									
Dimension									

LOWE PARK WILD FLOWERS & PRAIRIE GRASS MIX (4 ACRES)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	per lb	per lb
FERTILIZER									
Bloomers									
Baby Bloomers									
Deblooms									
Nat. grass tall									
Nat. grass short									
Plugs									
Annual Rye									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									
E- matting									

DONNELLY -75,000 SQ. FT. (1.5 ACRES)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	per bag
FERTILIZER									
SEED									
Athletic Interseed									
Pace Sporst Mix									
Pro Turf									
CHEMICALS									
Trimec Plus									
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

TAUBE 65,340 SQ.FT. (1.5 ACRES)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	per bag
FERTILIZER									
SEED									
Athletic Interseed									
Pace Sporst Mix									
Pro Turf									
CHEMICALS									
Trimec Plus									
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

ASCENSION 20,000 SQ. FT. (.5 ACRES)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	per bag
FERTILIZER									
SEED									
Athletic Interseed									
Pace Sporst Mix									
Pro Turf									
CHEMICALS									
Trimec Plus									
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

STARRY 100,0000 SQ. FT. (2 ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus			.5 gal 1%					
CONDITIONING								
Aeration								
Topdress mix								
Turface								

New Police Station (5 Acres)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus		1.17 gal 1%						
CONDITIONING								
Aeration								
Topdress mix								
Turface								

Fire Station 1 (.5 Acres)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER 20-0-5 Demension .1		50lbs						1 bag
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus		.15 gal 1%						
CONDITIONING								
Aeration								
Topdress mix								
Turface								

Fire Station 2 (2 Acres)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER 20-0-5 Demension .1		75lbs						1.5 bags
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus		.5 gal 1%						
CONDITIONING								
Aeration								
Topdress mix								
Turface								

CITY HALL 15,000 SQ. FT.								quanity	Cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	
FERTILIZER 20-0-5 Demension .1		50lbs.						1 bag	
SEED									
Pace 50/50									
Dense shade mix									
Pro Turf									
CHEMICALS									
Trimec Plus		.1 gal 1%							
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

Waldo's Rock Park								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER 13-13-13					400lbs			8 bags
SEED								
Dog Park Mix					300lb			6 bags
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

Lowe Park - Irish Dr Construction								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER 13-13-13					200lbs			4 bags
SEED								
Dog Park Mix					200lbs			4 bags
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

Tower Terrace ROW 1.25 acres								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Dog Park Mix								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus			.5 gals					
CONDITIONING								
Aeration								
Topdress mix								
Turface								

LOWE PARK BALL FIELDS (12 ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sport Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
Focus 15 G								
Organic 5-2-0								
Dimension								
Merit 0.5								
IRRIGATION								
Monthly average								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

LOWE PARK - FOOTBALL FIELD (4 ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
Focus 15 G								
Organic 5-2-0								
Dimension								
Merit 0.5								
IRRIGATION								
Monthly average								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

LOWE PARK -SOCCER FIELDS/FOOTBALL (10ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
50/50 Pace Mix								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
Focus 15 G								
Organic 5-2-0								
Dimension								
Merit 0.5								
IRRIGATION								
Monthly average								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

LOWE PARK A&E CENTER 5.3 ACRES								
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	
FERTILIZER								
25-5-15 Amphith		100lbs						
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

PIERCE 100,0000 SQ. FT. (2 ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

THOMAS PARK NEW BUILDING 75,000 sq.ft.								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
Focus 15 G								
Organic 5-2-0								
Dimension								
IRRIGATION								
Monthly average								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

GILL 50,000 SQ.FT. (1 ACRE)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	per bag
FERTILIZER									
SEED									
Athletic Interseed									
Pace Sporst Mix									
Pro Turf									
CHEMICALS									
Trimec Plus									
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

CITY PARK 45,000 SQ. FT. (1 ACRE)								quanity	Cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	
FERTILIZER									
25-5-15	75lbs.								
SEED									
Pace 50/50									
Dense shade mix									
Pro Turf									
CHEMICALS									
Trimec Plus	.25 gal 1%								
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

LIBRARY 15,000 SQ. FT.								quanity	Cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	
FERTILIZER									
25-5-15	75lbs								
SEED									
Athletic Interseed									
Pace 50/50									
Pro Turf									
CHEMICALS									
Trimec Plus	.15 gal 1%								
Focus 15 G									
Organic 5-2-0									
Dimension									

LOWE PARK WILD FLOWERS & PRAIRIE GRASS MIX (4 ACRES)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	per lb	per lb
FERTILIZER									
Bloomers									
Baby Bloomers									
Deblooms									
Nat. grass tall									
Nat. grass short									
Plugs									
Annual Rye									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									
E- matting									

DONNELLY -75,000 SQ. FT. (1.5 ACRES)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	per bag
FERTILIZER									
SEED									
Athletic Interseed									
Pace Sporst Mix									
Pro Turf									
CHEMICALS									
Trimec Plus									
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

TAUBE 65,340 SQ.FT. (1.5 ACRES)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	per bag
FERTILIZER									
SEED									
Athletic Interseed									
Pace Sporst Mix									
Pro Turf									
CHEMICALS									
Trimec Plus									
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

ASCENSION 20,000 SQ. FT. (.5 ACRES)								quanity	cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	per bag
FERTILIZER									
SEED									
Athletic Interseed									
Pace Sporst Mix									
Pro Turf									
CHEMICALS									
Trimec Plus									
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

STARRY 100,0000 SQ. FT. (2 ACRES)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

New Police Station (5 Acres)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER 19-19-19								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

Fire Station 1 (.5 Acres)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
25-5-15								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

Fire Station 2 (2 Acres)								quanity
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags
FERTILIZER								
25-5-15								
SEED								
Athletic Interseed								
Pace Sporst Mix								
Pro Turf								
CHEMICALS								
Trimec Plus								
CONDITIONING								
Aeration								
Topdress mix								
Turface								

CITY HALL 15,000 SQ. FT.								quanity	Cost
	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	50lb bags	
FERTILIZER									
25-5-15									
SEED									
Pace 50/50									
Dense shade mix									
Pro Turf									
CHEMICALS									
Trimec Plus									
Focus 15 G									
Organic 5-2-0									
Dimension									
IRRIGATION									
Monthly average									
CONDITIONING									
Aeration									
Topdress mix									
Turface									

Name of Facility: Water Dept Main Shop Site #4 & #1 **Date:** 9-06-16

Time: 2:00 pm

Inspector Name: Todd Steigerwaldt

Please check one of the following: X Dry Weather Inspection ☐ Wet

Area/Equipment/BMP Inspected	Observations	Actions Taken
Equipment Area	Area Clean/No Spills	None
Wash Bay	Area Clean	None
Paint Storage Cabinets	Clean/ No Spills	None
Fuel Cabinet	Clean/ No Spills	None
Oil Room	Minor areas of oil on top of barrels	Area cleaned
Outside facility inspection	No chemicals stored outside No run off observed	None
Rock, sand, dirt stockpiles	No erosion occurring. Stockpiles have perimeter containment measures installed.	None

Marion City Hall | Water Department
1225 6th Avenue, Suite 150 Marion, Iowa 52302
Ph: 319-743-6310 Fx: 319-377-7892
www.cityofmarion.org

Name of Facility: Well Site #3 **Date:** 9-06-15 **Time:** 2:30 PM

Inspector Name: Todd Steigerwaldt

Please check one of the following: X Dry Weather Inspection ☐ Wet

Area/Equipment/BMP Inspected	Observations	Actions Taken
Equipment Area / pumps	Area Clean	None
Outside facility inspection	No run off observed. Final seeding to occur once tower overflow sump pit is installed.	None
Booster station not in use at this time.		

Name of Facility: Well Site #6 **Date:** 09-06-15 **Time:** 2:50 PM

Inspector Name: Todd Steigerwaldt

Please check one of the following: X Dry Weather Inspection ☐ Wet

Area/Equipment/BMP Inspected	Observations	Actions Taken
Equipment Area / pumps	Area Clean	None
Outside facility inspection	No run off observed	None

MARION Water Department

Name of Facility: Well Site #5 **Date:** 09-06-16 **Time:** 3:30 PM

Inspector Name: Todd Steigerwaldt

Please check one of the following: X Dry Weather Inspection ☐ Wet

Area/Equipment/BMP Inspected	Observations	Actions Taken
Equipment Area / pumps	Area Clean	None
Outside facility inspection	No run off observed. Painting contractor on site to paint 0.2 MG ground storage tank using full containment.	Daily inspections

Name of Facility: Lindale Water Tower **Date:** 9-06-15 **Time:** 1:30 PM

Inspector Name: Todd Steigerwaldt

Please check one of the following: X Dry Weather Inspection ☐ Wet

Area/Equipment/BMP Inspected	Observations	Actions Taken
Outside facility inspection	No runoff observed. Tower recently painted. Contractor is hired to remove erosion control measures once permanent seeding is established.	None

MARION Water Department

Name of Facility: 35th Street Water Tower **Date:** 9-06-16 **Time:** 3: 45 PM

Inspector Name: Todd Steigerwaldt

Please check one of the following: X Dry Weather Inspection ☐ Wet

Area/Equipment/BMP Inspected	Observations	Actions Taken
Outside facility inspection	No runoff observed.	None

Name of Facility: Well Site #7 **Date:** 09-06-16 **Time:** 4:10 PM

Inspector Name: Todd Steigerwaldt

Please check one of the following: X Dry Weather Inspection ☐ Wet

Area/Equipment/BMP Inspected	Observations	Actions Taken
Equipment Area / pumps	Area Clean	None
Outside facility inspection	No run off observed	None

MARION
Engineering Department

2016 ANNUAL STORMWATER REPORT

APPENDIX B

- GP2 and SWPPP Summary Guidance for Permit Holders
- EPA Revised Expedited Settlement Offer for Storm Water
- IDNR MS4 Program Assistance Visit Report
- Policy and Procedure Seminar Presentation
- Report Examples of Quarterly SWPPP Inspections
- Inspection Report Examples of Post-Construction Stormwater Controls
- Outfall Inspection Report Examples
- ICWMA Organizational Management Work Plan Review

MARION
Engineering Department

Guidance And Important Points of the Iowa DNR's General Permit #2

Marion is one of Iowa's fastest growing communities, and the city has multiple active construction sites. The purpose of this document is to highlight some of the sections of the IDNR General Permit #2 (GP#2) and provide guidance for permit holders, contractors, developers, and builders doing work in Marion so that they have a more complete understanding of stormwater pollution prevention on the construction sites they are responsible for.

Included with this document are prints of the GP#2 and chapters of the Marion Municipal Code for Erosion and Sediment Control (Chapter 155), Stormwater Management (Chapter 156), and Illicit Discharges to the Storm Sewer System (Chapter 91). Also provided are printed excerpts from the State Urban Design and Specifications (SUDAS) Design Manual Chapter 7 and the Iowa Administrative Code Chapter 64 addressing transfer of ownership.

SWPPP Documentation and Inspections

GP#2 Part IV.D.4
"Qualified personnel (provided by the discharger) shall inspect disturbed areas of the construction site that have not been stabilized with a perennial, vegetative cover of sufficient density to preclude erosion at least once every seven calendar days."

GP#2 Part IV.D.7.A
"The storm water pollution prevention plan must clearly identify for each measure in the plan, the contractor(s) and/or subcontractor(s) that will implement the measure. All contractors and subcontractors identified in the plan must sign a copy of the certification statement…"

GP#2 Part IV.C.
"The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance…"

GP#2 Part V.B
"If the SWPPP plan is maintained at an off-site location such as a corporate office, it shall be provided for inspection no later than three hours after being requested."

What this means:

As a permit holder, you must make arrangements for a person or company who is professionally trained in soil erosion/sediment control and stormwater pollution prevention to inspect your site every 7 calendar days, and update the SWPPP plan as appropriate to reflect current site conditions and stormwater discharge control measures. These inspections must be completed for all active permits even during periods with no active construction all well as when there is snow cover.

Your SWPPP Plan must include signatures and contact information for all subcontractors (Co-Permittees) doing work on the site.

The SWPPP plan and inspections must be kept on-site in a covered structure located on the property. If the SWPPP plan and inspections are kept off-site, this location must be communicated to the Marion Engineering Department and be made available within three hours after being requested.

NOTE: the EPA recently inspected an active construction site in Marion where the SWPPP documents were kept at the developer's office. The EPA inspector informed the developer that in this circumstance, an on-site sign is needed providing information on where the SWPPP documents are located.

Waste and Trash Containment

GP#2 Part IV.D.2.C(1)
"All wastes composed of building materials must be removed from the site for disposal in permitted disposal facilities. No building material wastes or unused building materials shall be buried, dumped, or discharged at the site."

What this means:

Make sure that all trash and construction debris is properly contained in dumpsters or properly removed from the site.

The 21/14 Rule

GP#2 Part IV.D.2.A.(1)
"Stabilization measures shall be initiated on all disturbed areas as soon as practical but in no case where construction activity will not occur for a period of 21 or more calendar days later than the 14th day after no construction activity has occurred on such area."

What this means:

Any areas of your site that have bare dirt that will not be disturbed for three weeks or more must be stabilized with acceptable ground cover within two weeks after it was last disturbed.

Mud and Dirt in the Street

GP#2 Part IV.D.2.C(2)
"Off-site vehicle tracking of sediments shall be minimized."

What this means:

Ideally, mud and dirt on your construction site will be contained to the site and not get in the street. But if it happens, have brooms and shovels available to clean it up immediately.

Concrete Washouts

Concrete washout facilities must be established and clearly marked at the locations designated in your SWPPP plan. If these facilities are changed, your SWPPP plan must be revised to reflect the new locations. Uncontrolled concrete washouts are a violation the Clean Water Act and are an illicit discharge in the City of Marion. These must be cleaned up immediately and properly disposed of. Dried and hardened concrete pieces must be completely removed from the site and properly disposed of.

It is the responsibility of the permit holder to establish and maintain a site-wide concrete washout for the entire site, even after the road and utilities are constructed. Individual builders and concrete suppliers may have their own washout facilities on each lot, but there still needs to be a concrete washout available for the entire site.

Changes and Corrections to the Site and/or SWPPP

GP#2 Part IV.B.3
"Unless otherwise provided by the Department, the permittee shall have 3 business days after such notification to make the necessary changes."

What this means:

If a weekly or quarterly inspection identifies the need for changes to the site, SWPPP, or SWPPP plan, you will have 3 business days to make these changes. If these changes cannot be made within 3 business days, please contact the Marion Engineering Department to communicate when the corrections will be made.

NOTE: You will be notified immediately by the Marion Engineering Department of damaged or inadequate stormwater pollution prevention measures that result in direct illicit discharges, and corrections to these stormwater pollution prevention measures must be made immediately.

Violations and Penalties

For any conditions found that are in violation of the Marion Municipal Code or the IDNR GP#2, the City of Marion may proceed with the institution of a municipal infraction. The penalties for municipal infraction are $500 for the first offense, $750 for the second and subsequent offenses.

In addition to the regular site visits and inspections conducted by staff of the City of Marion, the Iowa Department of Natural Resources General Permit allows the DNR or EPA to inspect construction projects as well as have access to and copy any records that must be kept under the conditions of the permit. Also, In addition to the fines and penalties imposed by the City of Marion, both the DNR and EPA may issue penalties if your project is found to be in noncompliance with the permit requirements. Iowa Code authorizes penalties of up to $5,000 per day of violation for the NPDES permit violations. The EPA may also issue a penalty of up to $27,500 per day for each violation.

Transfer of Ownership

GP#2 Part II.F
"For storm water discharge associated with industrial activity for construction activities where the ownership changes, the Department must be notified of the title transfer within 30 days. Both the previous owner(s) and the new owner(s) are responsible for notifying the Department of the transfer and the new owner's name and contact information."

SUDAS Design Manual Chapter 7B.E. (Erosion and Sediment Control Regulatory Requirements)
Coverage under General Permit No. 2 cannot be discontinued for individual portions of a project; the permit requires that the entire project reach final stabilization before a Notice of Discontinuation can be filed, and coverage for the entire site terminated." This section also refers to the Iowa Administrative Code [567 IAC 64.6(6)(b)] which states "…both the permittee and transferee shall be responsible for compliance with the provisions of the general permit…"

What this means:

As a permit holder, you are responsible for stormwater pollution prevention for the entire site until you file for the Notice Of Discontinuation with IDNR or you sell the entire site to another party and both you and the buyer notify the IDNR of the Transfer of ownership.

For individual lots that are sold off on the site, the buyer/builder of the lot(s) must obtain from the City of Marion a Minor Erosion Control Permit for construction on each lot. Although those individual builders/permittees will be responsible for stormwater pollution prevention on the lots they obtain a permit for, you – as the holder of the GP#2 for the entire site – are still responsible for stormwater pollution prevention on the entire development.

Rough Grading, Finish Grading, and Easements

Any grading, swales, and/or easements designated for stormwater conveyance and drainage through/around your site must be maintained during construction activities on the site. Final grading prior to seeding, sodding, or final stabilization must be as specified on the approved engineering plans.

On many construction projects, such as private residential subdivisions or commercial developments, it is common for a developer to sell off individual lots before work on the entire subdivision is complete. Coverage under General Permit No. 2 cannot be discontinued for individual portions of a project; the permit requires that the entire project reach final stabilization before a Notice of Discontinuation can be filed, and coverage for the entire site terminated. This creates a situation where the developer and any co-permittees are responsible for compliance with the permit for land they no longer own or have control over.

A provision within the Iowa Administrative Code [567 IAC 64.6(6)(b)] addresses this situation. This provision allows the developer and new property owner to become co-permittees under the NPDES permit. This provision requires that the new owner be notified, in writing, of the existence and location of the permit and the SWPPP and of their responsibility to comply with the permit. This provision within the Code also allows the new owner to accept sole responsibility for compliance with the permit for the transferred property. This transfer of responsibility requires written acknowledgement by the new owner that they accept responsibility for complying with the permit for the property in question.

A copy of all property transactions, notifications of coverage, and transfer of responsibility agreements must be included with the SWPPP.

IOWA ADMINISTRATIVE CODE CHAPTER 64
WASTEWATER CONSTRUCTION AND OPERATION PERMITS

64.6(6) Transfer of ownership—construction activity part of a larger common plan of development. For construction activity which is part of a larger common plan of development, such as a housing or commercial development project, in the event a permittee transfers ownership of all or any part of property subject to NPDES General Permit No. 2, both the permittee and transferee shall be responsible for compliance with the provisions of the general permit for that portion of the project which has been transferred, including when the transferred property is less than five acres in area, from and after the date the department receives written notice of the transfer, provided that:

a. The transferee is notified in writing of the existence and location of the general permit and pollution prevention plan, and of the transferee's duty to comply, and proof of such notice is included with the notice to the department of the transfer.
b. If the transferee agrees, in writing, to become the sole responsible permittee for the property which has been transferred, then the transferee shall be solely responsible for compliance with the provisions of the general permit for the transferred property from and after the date the department receives written notice of the transferee's assumption of responsibility.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

MAY 19 2006

MEMORANDUM

SUBJECT: Revised Expedited Settlement Offer Program for Storm Water (Construction)

FROM: Walker B. Smith, Director
Office of Civil Enforcement

TO: Water Management Division Directors
Regions I, III, IV, V, VII, IX

Enforcement Division Directors
Regions II, VI, VIII, X

Regional Counsels
Regions I - X

This memorandum transmits the final revised framework for the Expedited Settlement Offer (ESO) Program for Storm Water, which supersedes the "Expedited Settlement Offer (ESO) Program for Storm Water" originally issued on August 21, 2003. The revised ESO program includes a variety of modifications based on issues identified during the initial pilot implementation period. This ESO program is intended to promote compliance with NPDES storm water regulations at construction sites by providing an expedited enforcement mechanism in situations where environmental impacts are potentially less significant, violations can be quickly corrected and appropriate penalties easily collected. I want to thank the Regions for their participation in revising this enforcement tool; their knowledge and experience were extremely valuable throughout the revision process.

Storm water violations at construction sites can involve potentially significant cumulative negative environmental impacts. Issuing timely and consistent enforcement actions to compel compliance with storm water requirements at construction sites ensures prompt correction of potentially harmful violations and deters future noncompliance. An expedited settlement offer provides an efficient "real time" enforcement mechanism in situations where violations can be quickly corrected and an appropriate penalty promptly collected.

The purpose of expedited settlements is to supplement, not replace, other more traditional enforcement approaches. ESOs should be part of a comprehensive compliance and enforcement strategy that encompasses the full range of compliance and enforcement tools. Regions implementing the ESO program should also use traditional administrative and judicial enforcement mechanisms to ensure a well-balanced enforcement program. Traditional enforcement actions should be pursued for violations where an expedited settlement offer does not adequately address the level of noncompliance or the nature of the violator (*e.g.*, where there is evidence of significant environmental harm, large economic benefit, or a recalcitrant violator).

In using the ESO approach, we encourage regions to consult additional storm water guidance in reaching their decisions. In particular, we recommend that the regions refer to the *Enforcement Response Guide for Storm Water (Construction) (ERG)*. The *ERG* describes factors to consider when selecting from the different types of enforcement actions. The *2003 Storm Water Compliance and Enforcement Strategy* and the *2005 Performance-Based Strategy for Storm Water*, both of which rely on an environmental harm-based targeting approaches, should also be consulted to focus priorities on storm water dischargers/discharges that pose the most significant harm to the environment (e.g., non-filers or high growth communities where storm water runoff may result in high sediment loadings).

Before applying the ESO, regions should familiarize themselves with the revised ESO program. The revisions have altered both the scope and the process of the program. The most significant revisions include the following:

- eliminating the 50-acre limit for ESO-eligible sites;
- extending eligibility to all operators except those who, in the past five years, have been issued a formal enforcement action for violation of either the multi-sector general permit (MSGP), the construction general permit (CGP), or an individual storm water permit issued by EPA or a state: 1) at the facility where the instant violation occurred; or 2) at two or more facilities, under the ownership, operation, or control of the operator;
- increasing the appropriate time between an inspection and EPA's mailing of an ESO from seven (7) to twenty-one (21) days;
- limiting the scope of respondent's certification in the *Expedited Settlement Agreement* to correction of deficiencies identified during the inspection and payment of penalties;
- capping the total penalties for Storm Water Pollution Protection Plan (SWPPP) violations at $4500 so as not to exceed the penalty for failure to submit a SWPPP, which has been increased from $4000 to $5000; and
- clarifying that generally ESOs should <u>not be</u> issued simultaneously with administrative compliance orders for the same violation.

A joint regional and OCE workgroup revised the following documents: the ESO procedures (<u>see</u> Attachment 1), the penalty calculation worksheet (now called the *Expedited Settlement Deficiencies Form* or *Deficiencies Form*, <u>see</u> Attachment 2), the *Expedited Settlement Agreement Instructions* (<u>see</u> Attachment 3), and the *Expedited Settlement Agreement* (<u>see</u>

Attachment 4). Additionally, OCE has created a new informational document for site operators, the *Preliminary Inspection Observations* (see Attachment 5).

Each Region has provided my office with its commitment to use the storm water construction ESO as part of its comprehensive storm water compliance and enforcement effort. This revised guidance should replace the previous 2003 guidance as your reference for how to implement an effective and appropriate ESO program for storm water construction violations. We look forward to continuing to work with the Regions in exploring meaningful and effective opportunities to use the ESO for storm water enforcement. For specific questions regarding this memorandum and its attachments, please contact Everett Volk at (202) 564-2828, or Lauren Kabler at (202) 564-4052.

cc: Mark Pollins, Water Enforcement Division
Michael Alushin, Office of Compliance
Linda Boornazian, Office of Wastewater Management
Carol Ann Siciliano, Office of General Counsel
NPDES Regional Enforcement Managers

Attachments

REVISED EXPEDITED SETTLEMENT OFFER FOR STORM WATER (CONSTRUCTION)
May 2006[1]

Appropriate Use of the ESO

Storm water cases often involve facilities or sites where the cumulative effect of discharges can have significant environmental impact. In storm water cases, issuing timely and consistent enforcement actions is necessary to deter future violations and promote prompt return to compliance. This can be achieved through issuing an expedited settlement offer pursuant to the revisions to the *"Consolidated Rules of Practice Governing the Administrative Assessment of Civil Penalties, Issuance of Compliance or Corrective Action Orders, and the Revocation, Termination or Suspension of Permits"* (*Consolidated Rules*), 40 C.F.R. Part 22. This document provides guidance in implementing Part 22 with respect to certain violations of Clean Water Act storm water regulations for construction activities.

The *Consolidated Rules* provide that, where the parties agree to settle one or more causes of action before the filing of an administrative penalty complaint, a proceeding may be commenced and concluded simultaneously by issuance of a consent agreement and final Clean Water Act section 309(g) penalty order. 40 C.F.R. § 22.13(b).[2] As formulated in the Expedited Settlement Agreement Offer (ESO) program, this provides "real time" enforcement in situations where violations can be quickly corrected and a penalty collected within a short amount of time, generally a few months from EPA's discovery of the violation. Under the ESO approach, in specified circumstances, a violator of storm water regulations may resolve its violation through an expedited process in which the violator (1) corrects identified deficiencies, (2) signs an agreement with EPA certifying prompt correction, and (3) pays a penalty.

Violations appropriate for expedited settlements are those that are easily correctable and that may pose some potential harm to human health or the environment, but which do not *result* in significant harm to, or present an imminent and substantial endangerment to, human health or the environment. EPA regions are strongly encouraged to continue targeting for serious violations that result in harm to the environment and human health. However, in those instances where easily correctable violations are discovered that pose some potential harm, the ESO would be an appropriate response mechanism.

The ESO is designed to provide an administratively streamlined approach to resolving violations where a full administrative compliance order (ACO) is not warranted. In requiring a respondent to correct deficiencies, certify to those corrections and pay a penalty, the *Expedited Settlement Agreement* achieves the same ends as an ACO, but in a shorter, more easily administered format. As a result, a separate compliance order requiring corrective action is

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[1]This version supersedes the "Expedited Settlement Offer (ESO) for Storm Water (Construction)" issued on August 21, 2003.

[2]An ESO developed under the approach described here is a tool for quickly resolving certain CWA storm water violations. It is not appropriate for use as a penalty demand in an administrative penalty hearing or a judicial trial. Further, whether the Agency decides to use the ESO approach at all is purely within EPA's discretion.

unnecessary, and regions should generally not issue ACOs at the same time that they issue ESOs.[3]

Criteria

The criteria below describe when a site should be considered for the ESO program. The purpose of the ESO Criteria is to ensure that ESOs are issued under the appropriate circumstances. Sites that meet all of the following criteria may be eligible for an ESO: (1) sites where the penalty calculated via the ESO *Deficiencies Form* is no more than $15,000; (2) sites where there is no evidence of significant environmental impact (*e.g.*, turbidity observed in receiving water); (3) sites where the operator is not a repeat violator[4]; and (4) sites where there is no evidence of non-allowable, non-storm water discharges (*e.g.*, industrial process wastewater discharge, such as discharge from a concrete batch plant operation). While there are no site size restrictions on the use of the ESO, generally the bigger the site the greater the potential for significant environmental harm. Therefore, Regions should carefully consider site size prior to using the ESO.

Terminology

Expedited Settlement Deficiencies Form. The *Deficiencies Form* is provided to the regions to calculate a proposed or recommended penalty for the site based on the inspector's findings. The values assigned to each permit requirement in the *Deficiencies Form* reflect the costs the operator would have incurred had the operator obtained and complied with a permit, and a gravity component. Penalties should be based on all deficiencies found at a site, including (1) statutory violations, (2) violations of an NPDES permit, and (3) in the case of facilities without an NPDES permit, deficiencies that would have constituted a violation at a properly permitted facility. In short, the region should consider all deficiencies at a site, whether or not the operator obtained a permit, when calculating a penalty. The *Deficiencies Form* will be incorporated by reference into the *Expedited Settlement Agreement*.

Preliminary Inspection Observations. The *Preliminary Inspection Observations* is an optional form that regions may choose to leave with a site operator at the time of inspection. It provides a simple checklist inspectors may use to highlight their initial observations about potential problems at a site. It is not a formal settlement offer and imposes no obligations on site operators who receive it. However, providing site-specific deficiency information at the time of inspection will afford operators an opportunity to achieve prompt compliance if they so choose.

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[3]If regions believe the joint issuance of an ACO/ESO is necessary to ensure compliance, they must consult with the Water Enforcement Division (WED) on a case-by-case basis prior to issuance.

[4]A repeat violator is any operator who, in the past five years, has been issued a formal enforcement action, or an administrative penalty order (APO), by either EPA or a state for violation of either the multi-sector general permit (MSGP), the construction general permit (CGP), or an individual storm water permit issued by EPA or a state: 1) at the facility where the instant violation occurred; or 2) at two or more facilities, under the ownership, operation, or control of the operator.

Expedited Settlement Agreement. This agreement is a "Consent Agreement and Final Order" pursuant to 40 C.F.R. § 22.

Procedure

This section describes the steps the regions should follow in developing an individual ESO, and finalizing an *Expedited Settlement Agreement*:

1. The inspector targets a site after consulting appropriate storm water targeting guidance and conducts a storm water inspection.

2. The inspector consults the ESO Criteria (and other storm water guidance, including that referenced above) to determine whether the site is eligible for the ESO.

3. If the inspector determines that the site is eligible for the ESO, the inspector completes the *Deficiencies Form* (Attachment 2) and calculates a proposed penalty.

4. Regions should not leave a *Deficiencies Form* at a site after an inspection. Instead, regions can choose to have the inspector leave a *Preliminary Inspection Observations* (Attachment 5) form at the time of the inspection. It is important to note, however, that the *Preliminary Inspection Observations* form is only an informational tool and, if the inspector does leave a copy on site, the Region retains the ability to make a determination as to what type of enforcement action to take, if any, for alleged violations observed during the inspection. Inspectors should receive regional training in the use of this tool so that the inspector can explain the expedited settlement approach to the inspected entity, and, in particular, be able to clearly indicate that the *Preliminary Inspection Observations* form does not reflect EPA decisions regarding violations discovered during inspection and imposes no obligations on the facility/site operator.

5. Regional management reviews the *Deficiencies Form* and finalizes the appropriate penalty. Once the penalty is finalized, an *Expedited Settlement Agreement* (Attachment 4), along with *Expedited Settlement Agreement Instructions* sheet (Attachment 3) and the *Deficiencies Form* (Attachment 2) are mailed to each operator at the site within 21 business days of the inspection.

6. The site representative is given 30 days to return a signed *Expedited Settlement Agreement* and penalty payment to the Region in the manner outlined in the *Expedited Settlement Agreement Instructions*.[5] If the signed *Expedited Settlement Agreement* is not received within 30 days, it is automatically withdrawn without prejudice to EPA's ability to institute an enforcement action for noncompliance as identified in the *Deficiencies Form*. Regions have the discretion to extend the offer, for cause, but generally should

[5]Requesting the penalty payment prior to public notice guards against having to file collection actions in the future; however, some regions may choose not to require payment prior to public notice. If this is the case, a region may request that the respondent submit payment within ten days of receiving notice from EPA that the Agreement is effective.

not grant an extension beyond 60 to 90 days after the violator's receipt of the ESO. If the offer is withdrawn, the region should be prepared to escalate its enforcement response by commencing a traditional administrative enforcement proceeding under 40 C.F.R. Part 22.

7. Before issuing an *Expedited Settlement Agreement*, the region must provide public notice and a reasonable opportunity to comment on the proposed issuance of the ESO. See CWA section 309(g)(4)(A). EPA's regulations require that the agency must provide, in the case of settlement by consent agreement and final order, notice no less than 40 days before issuance of an order assessing a penalty. 40 C.F.R. § 22.45(b). We recommend a thirty-day comment period. Regions should consider any public comments received in that period regarding the *Expedited Settlement Agreement*. If, after reviewing the public comments, a region determines that the *Expedited Settlement Agreement* is appropriate (*e.g.* in the public interest), the region should proceed with issuance. The appropriate delegatee in the region must sign as complainant. 40 C.F.R. § 22.18(b)(2). No sooner than ten days after the close of the recommended comment period, 40 C.F.R. § 22.18(a), an appropriate official at the region (*e.g.*, a Regional Judicial Officer) may sign and ratify the consent agreement. 40 C.F.R. § 22.18(b)(3). No settlement is final without a final order from the Regional Administrator or Regional Judicial Officer ratifying the *Expedited Settlement Agreement*.

8. Regions should file the original signed *Expedited Settlement Agreement* with the Regional Hearing Clerk, mail a copy back to the respondent, and mail a copy to any commenters informing them of their right to file, within 30 days of receipt of their copy of the *Expedited Settlement Agreement*, either a request with the Regional Administrator for a hearing on the penalty pursuant to CWA Section 309(g)(4)(c), or a petition for judicial review to set aside the *Expedited Settlement Agreement* pursuant to CWA Section 309(g)(8) and Part 22. The *Expedited Settlement Agreement* is effective 30 days after signature by the Appropriate Official, unless a request for a hearing on the penalty or a petition to set aside the *Expedited Settlement Agreement* is filed by a commenter. See CWA Section 309(g)(5).

9. Regions should consult the most current Office of Compliance (OC) "Call Memo" for reporting requirements. Pursuant to the discussion above, ESOs should not have accompanying AOs and therefore the only action reported in ICIS should be the ESO. Regions should report the environmental benefits of ESOs in ICIS. Environmental benefits can be calculated by estimating the sediment reduction at construction sites where deficiencies have been corrected pursuant to an ESO. The Storm Water Pollutant Reduction Calculator, which can be obtained from OC's Enforcement Targeting and Data Division or found online at: http://intranet.epa.gov/oeca/oc/etdd/fy05eoy/wetweathercalculationtools.html, should be used to estimate sediment reduction.

EXPEDITED SETTLEMENT AGREEMENT INSTRUCTIONS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION [Region]

INSTRUCTIONS

The United States Environmental Protection Agency (EPA) has authority under Section 309 of the Clean Water Act to pursue civil penalties for violations of the storm water regulations. EPA encourages the expedited settlement of certain violations of storm water requirements, such as the violations cited in the Expedited Settlement Agreement (**"Agreement"**) for which these instructions are provided.

You may resolve this matter quickly by: (1) correcting all deficiencies identified by EPA in the *Deficiencies Form*; (2) detailing your corrective actions in a written report; (3) signing the original Agreement; and (4) submitting your penalty payment by check with case name and docket number noted.

[Within THIRTY (30) DAYS from your receipt of the Agreement, you must send the original, signed Agreement, the report detailing your corrective actions, and a photocopy of your penalty check, via certified mail, to:

INSERT - REGION ADDRESS

****

You must also send a photocopy of the Agreement and your original penalty check with the case name and docket number noted, via certified mail, to:

INSERT- REGION'S PITTSBURGH P.O. BOX ADDRESS]

OR

[Within THIRTY (30) DAYS from your receipt of the Agreement, you must send the original, signed Agreement, which includes a certification that you will submit your penalty payment within TEN (10) days from the date you receive notice from EPA that the Agreement is effective, and the report detailing your corrective actions via certified mail, to:

INSERT- REGION ADDRESS

****

Within TEN (10) days from the date you receive notice from EPA that the Agreement is effective, you must send your original check with the case name and docket number noted and a copy of the Agreement, via certified mail, to:

INSERT- REGION'S PITTSBURGH P.O. BOX. ADDRESS]

Please retain copies of the signed agreement, the report detailing your corrective actions and the penalty checks for your own records.

You may contact the person listed below and request an extension. EPA will consider whether to grant an extension on a case-by-case basis. If you believe that the alleged violations are without merit (and you can provide evidence contesting the allegations) you must provide such information to EPA as soon as possible but no later than THIRTY

(30) days from your receipt of the Agreement.

If you choose to sign and return the Agreement, you waive your opportunity for a hearing and to appeal pursuant to Section 309 of the Clean Water Act. If you choose not to sign and return the Agreement, or contact EPA, within THIRTY (30) days, the Agreement will be automatically withdrawn, without prejudice to EPA's ability to file an enforcement action for the violations alleged herein or any other violations. EPA may choose to pursue more formal enforcement measures to correct the violation(s) and seek penalties of up to a maximum penalty of $32,500 per day per violation. Failure to return the Agreement within the approved time does not relieve you of the responsibility to comply fully with the regulations.

[Insert Region-specific public notice procedure(s)].

[Insert Region-specific contact instructions].

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
[Region, Address]
EXPEDITED SETTLEMENT AGREEMENT
Docket Number: CWA-_____-_____, NPDES No._____

[XXX] ("Respondent") is a "person," within the meaning of Section 502(5) of the Clean Water Act ("Act"), 33 U.S.C. § 1362(5), and 40 C.F.R. § 122.2.

Attached is an "Expedited Settlement Offer Deficiencies Form" ("Form"), which is incorporated by reference. By its signature, Complainant ("EPA") finds that Respondent is responsible for the deficiencies specified in the Form.

Respondent **[had an unauthorized discharge of storm water in violation of Section 301(a) of the Clean Water Act, 33 U.S.C. § 1311,]** or **[failed to comply with its National Pollutant Discharge Elimination System ("NPDES") storm water permit issued under Section 402 of the Act, 33 U.S.C. § 1342.]**

EPA finds, and Respondent admits, that Respondent is subject to Section 301(a) of the Act, 33 U.S.C. § 1311, and that EPA has jurisdiction over any "person" who "discharges pollutants" from a "point source" to "waters of the United States." Respondent neither admits nor denies the deficiencies specified in the Form.

EPA is authorized to enter into this Consent Agreement and Final Order ("Agreement") under the authority vested in the Administrator of EPA by Section 309(g)(2)(A) of the Act, 33 U.S.C. § 1319(g)(2)(A), and by 40 C.F.R. § 22.13(b). The parties enter into this Agreement in order to settle the civil violation(s) alleged in this Agreement for a penalty of $_____. Respondent consents to the assessment of this penalty, and waives the right to: (1) contest the finding(s) specified in the Form; (2) a hearing pursuant to Section 309(g)(2) of the Act, 33 U.S.C. § 1319(g)(2); and (3) appeal pursuant to Section 309(g)(8), 33 U.S.C. § 1319(g)(8).

Additionally, Respondent certifies, subject to civil and criminal penalties for making a false statement to the United States Government, that any deficiencies identified in the Form have been corrected. Respondent shall submit a written report with this Agreement detailing the specific actions taken to correct the violations cited herein.

[Respondent certifies that it has submitted a bank, cashiers, or certified check, with case name and docket number noted, for the amount specified above, payable to the "Treasurer, United States of America," via certified mail, to: INSERT- REGION'S PITTSBURGH P.O. Box No.]
or
[**Respondent certifies that, within ten (10) days of receiving notice from EPA that the Agreement is effective (thirty (30) days from the date it is signed by the [Appropriate Official]), Respondent shall submit a bank, cashiers or certified check, with case name and docket number noted, for the amount specified above payable to the "Treasurer, United States of America," via certified mail, to: INSERT - REGION'S PITTSBURGH P.O. BOX.]**

This Agreement settles EPA's civil penalty claims against Respondent for the Clean Water Act violation(s) specified in this Agreement. EPA does not waive its rights to take any enforcement action against Respondent for any other past, present, or future civil or criminal violation of the Act or of any other federal statute or regulation. EPA does not waive its right to issue a compliance order for any uncorrected deficiencies or violation(s) described in the Form. EPA has determined this Agreement to be appropriate.

This Agreement is binding on the parties signing below and effective **[thirty (30) days from the date it is signed by the Presiding Officer unless a petition to set aside the Order is filed by a commenter pursuant to Section 309(g)(4)(C) of the Act, 33 U.S.C. § 1319(g)(4)(C), and Part 22]** or **[upon filing with the Regional Hearing Clerk.]**

APPROVED BY EPA:
_____ Date:_____
[Complainant]
[Title]

APPROVED BY RESPONDENT:
Name (print): _____
Title (print): _____
Signature: _____ Date: _____

[More than 40 days have elapsed since the issuance of public notice pursuant to Section 309(g)(4)(A) of the Act, 33 U.S.C. § 1319(g)(4)(A), and EPA has received no comments concerning this matter.]

Having determined that this Agreement is authorized by law, IT IS SO ORDERED:

_____ Date_____
[Appropriate Official]
[Title]

Expedited Settlement Offer Worksheet
Deficiencies Form

Consult instructions regarding eligibility criteria and procedures prior to use

version 10.3.4

		LEGAL NAME AND MAILING ADDRESS OF OPERATOR	Telephone Number	NPDES Permit Number
1				
			Inspector Name:	
			Inspector Agency:	Other
			Entrance Interview Conducted:	
			Exit Interview Conducted:	
		LOCATION AND ADDRESS OF SITE	Exit Interview given to:	
2			Exit Interview time:	Date:

		FACILITY DESCRIPTION / CONTACT NAMES	
		Name of Site Contact (ESO Worksheet recipient):	
		Name of Authorized Official (40 CFR 122.22):	
		Inspection Date:	
		Start Construction Date:	
		Estimated Completion Construction Date:	
		If Unpermitted, Number of Months Unpermitted:	
		Name of Receiving Water Body (Indicate whether 303(d) listed):	
		Acres Currently Disturbed | Acres to be Disturbed in Whole Common Plan:	
		Has Operator Requested Rainfall Erosivity or TMDL Waiver per 44 CFR 122.26(b)(15)?	

		PERMIT COVERAGE	Findings	Citation Reference**	RCA*	No. of Deficiencies		Dollar Amount		Total
3		Operator unpermitted for _____months (# months unpermitted equals number of violations)		CWA 301			X	$500.00	=	
		SWPPP REVIEW								
4		SWPPP not prepared (If no SWPPP, leave elements 5 - 30 blank)		CGP 3.1.A				$5,000.00	=	
5		SWPPP prepared but prepared after construction start (# of months = # of violations)		CGP 3.1.A			X	$75.00	=	
6		SWPPP does not identify all potential sources of pollution to include: porta-pottys, fuel tanks, staging areas, waste containers, chemical storage areas, concrete cure, paints, solvents, etc…		CGP 3.1.B				$250.00	=	
7		SWPPP does not identify all operators for the project site and the areas of the site over which each operator has control		CGP 3.3.A				$500.00	=	
8		SWPPP does not have site description, as follows:								
	A	Nature of activity in description		CGP 3.3.B.1				$100.00	=	
	B	Intended sequence of major activities		CGP 3.3.B.2				$100.00	=	
	C	Total disturbed acreage		CGP 3.3.B.3				$100.00	=	
	D	General location map		CGP 3.3.B.4				$100.00	=	
	E	Site map		CGP 3.3.C				$500.00	=	
	F	Site map does not show drainage patterns, slopes, areas of disturbance, locations of major controls, structural practices shown, stabilization practices, offsite materials, waste, borrow or equipment storage ageas, surface waters, discharge points, areas of final stabilization (count each omission under 8F as 1 violation)		CGP 3.3.C.1-8			X	$50.00	=	
	G	Location/description industrial activities, like concrete or asphalt batch plants		CGP 3.3.D				$500.00	=	
9		SWPPP does not:								
	A	Describe all pollution control measures (e.g. BMPs)		CGP 3.4.A				$750.00	=	

	B	Describe sequence for implementation		CGP 3.4.A				$250.00	=	
	C	Detail operator(s) responsible for implementation		CGP 3.4.A				$250.00	=	
10		SWPPP does not describe interim stabilization practices		CGP 3.4.B				$250.00	=	
11		SWPPP does not describe permanent stabilization practices		CGP 3.4.B				$250.00	=	
12		SWPPP does not describe a schedule to implement stabilization practices		CGP 3.4.B				$250.00	=	
13		Following dates are not recorded: major grading activities; construction temporarily or permanently ceased; stabilization measures initiated (count each omission under 13 as 1 violation)		CGP 3.4.C.1-3			X	$250.00	=	
14		SWPPP does not have description of structural practices to divert flows from exposed soils, retain flows, or limit runoff from exposed areas		CGP 3.4.D				$500.00	=	
15		SWPPP does not have a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur AFTER construction operations have been completed		CGP 3.4.E				$500.00	=	
16		SWPPP does not describe measures to prevent discharge of solid materials to waters of the US, except as authorized by 404 permit		CGP 3.4.F				$500.00	=	
17		SWPPP does not describe measures to minimize off-site vehicle tracking and generation of dust		CGP 3.4.G				$500.00	=	
18		SWPPP does not include description of construction or waste materials expected to be stored on site w/updates re: controls used to reduce pollutants from these materials		CGP 3.4.H				$250.00	=	
19		SWPPP does not have description of pollutant sources from areas other than construction (asphalt or concrete plants) w/ updates re: controls to reduce pollutants from these materials		CGP 3.4.I				$500.00	=	
20		SWPPP does not identify allowable sources of non-storm water discharges listed in subpart 1.3.B of the CGP		CGP 3.5				$500.00	=	
21		SWPPP does not identify/ensure implementation of pollution prevention measures for non-storm water discharges		CGP 3.5				$500.00	=	
22		Endangered Species Act documentation is not in SWPPP		CGP 3.7				$500.00	=	
23		Historic Properties (Reserved)								
24		Copy of permit and/or NOI not in SWPPP (count each omission under 24 as 1 violation)		CGP 3.8			X	$250.00	=	
25		SWPPP is not consistent with requirements specified in applicable sediment and erosion site plans or site permits, or storm water management plans or site permits approved by State, Tribal or local officials (e.g., MS4 requirements)		CGP 3.9				$750.00	=	
26		SWPPP has not been updated to remain consistent with changes applicable to protecting surface waters in State, Tribal or local erosion plans		CGP 3.9				$250.00	=	
27		Copies of inspection reports have not been retained as part of the SWPPP for 3 years from date permit coverage terminates		CGP 3.10.G				$500.00	=	
28		SWPPP has not been updated/modified to reflect change at site effecting discharge, or where inspections identify SWPPP/BMPs as ineffective, updates to SWPPP regarding modifications to BMPs not made within 7 days of such inspection (count each omission under under 28 as 1 violation)		CGP 3.11.C			X	$50.00	=	
29		Copy of SWPPP not retained on site		CGP 3.12.A				$500.00	=	
		A SWPPP not made available upon request		CGP 3.12.C				$500.00	=	
30		SWPPP not signed/certified		CGP 3.12.D				$500.00	=	

Subtotal SWPPP Deficiencies	$0

		INSPECTIONS								
31		Inspections not performed and documented either once every 7 days, or once every 14 days and within 24 hours after storm event greater than 0.5 inches or greater (not required if: temp stabilization; runoff unlikely due to winter conditions; construction during arid periods in arid areas) (Count each failure to inspect and document as one violation).		CGP 3.10.A, 3.10.B			X	$250.00	=	
		No inspections conducted and documented (if True, then leave elements 32-39 blank)						True or False		
		Number of Inspections expected if performed every 7 days:	0							
		Number of Inspections expected if performed bi-weekly:	0							
		If known, number of days of rainfall of >0.5"								
32		Inspections not conducted by qualified personnel		CGP 3.10.D				$50.00	=	
33		All areas disturbed by construction activity or used for storage of materials and which exposed to precipitation not inspected		CGP 3.10.E.				$50.00	=	
34		All pollution control measures not inspected to ensure proper operation		CGP 3.10.E.				$50.00	=	
35		Discharge locations are not observed and inspected		CGP 3.10.E.				$50.00	=	
36		For discharge locations that are not accessible, nearby locations are not inspected		CGP 3.10.E.				$50.00	=	
37		Entrance/exit not inspected for off-site tracking		CGP 3.10.E.				$50.00	=	
38		Site inspection report does not include: date, name and qualifications of inspector, weather information, location of sediment/pollutant discharge, BMP(s) requiring maintenance, BMP(s) that have failed, BMP(s) that are needed, corrective action required including changes/updates to SWPPP and schedule/dates (count each omission under 38 as 1 violation)		CGP 3.10.G			X	$50.00	=	
39		Inspection reports not properly signed/certified (count each failure to to sign/certify as 1 violation)		CGP 3.10.G			X	$50.00	=	
								Subtotal Inspections Deficiencies		$0
		AVAILABILITY OF RECORDS								
40		Sign/notice not posted		CGP 3.12.B				$250.00	=	
	A	Does not contain copy of complete NOI		CGP 3.12.B				$50.00	=	
	B	Location of SWPPP or contact person for scheduling viewing times where on-site location for SWPPP unavailable not noted on sign		CGP 3.12.B				$50.00	=	
								Subtotal Records Deficiencies		$0
		BEST MANAGEMENT PRACTICES								
41		No velocity dissipation devices located at discharge locations or outfall channels to ensure non-erosive flow to receiving water		CGP 3.13.F				$500.00	=	
42		Control measures are not properly:								
	A	Selected, installed and maintained		CGP 3.13.A				$500.00	=	
	B	Maintenance not performed prior to next anticipated storm event		CGP 3.6.B				$250.00	=	
		(count each failure to select, install, maintain each BMP as one violation								
43		When sediment escapes the site, it is not removed at a frequency necessary to minimize off-site impacts		CGP 3.13.B				$500.00	=	
44		Litter, construction debris, and construction chemicals exposed to storm water are not prevented from becoming a pollutant source (e.g. screening outfalls, pickup daily, etc.)		CGP 3.13.C				$500.00	=	

45		Stabilization measures are not initiated as soon as practible on portions of the site where construction activities have temporarily or permanently ceased within 14 days after such cessation		CGP 3.13.D				$500.00	=	
		*Exceptions:								
		(a) Snow or frozen ground conditions								
		(b) Activities will be resumed within 14 days								
		(c) Arid or Semi-arid areas (<20 inches per								
46		Common Drainage of 10+ acres does not have a sedimentation basin for the 2 year, 24 hour storm, or 3600 cubic ft. storage per acre drained		CGP 3.13.E.1				$1,000.00	=	
	A	Where sedimentation basin not attainable, smaller sediment basins, sediment traps, or erosion controls not implemented for downslope		CGP 3.13.E.2				$1,000.00	=	
	B	Sediment not removed from sediment basin or traps when design capacity reduced by 50% or more		CGP 3.6.C				$500.00	=	
47		Common Drainage less than 10 acres does not have sediment traps, silt fences, vegetative buffer strips, or equivalent sediment controls for all down slope boundaries (not required if sedimentation sediment basin meeting criteria in 46 above)		CGP 3.13.E.3				$500.00	=	
	A	Sediment not removed from sediment trap when design capacity reduced by 50% or more		CGP 3.6.C			X	$500.00	=	
								Subtotal BMP Deficiencies		$0

SMALL BUSINESS EVALUATION

48		Is the Owner/Operator a Small Business?								
		A *small business* is defined by EPA's Small Business Compliance Policy as: "a person, corporation, partnership, or other entity that employs 100 or fewer indiviudals (across all facilities and operations owned by the small business)." The number of employees should be considered as full-time equivalents on an annual basis, including contract employees (see 40 CFR 372.3). A full time employee unit is 2000 hours worked per year.								
								Total Expedited Settlement:		**$0**

* **R**equires **C**orrective **A**ction

** NPDES General Permit, 68 FR 39087, issued by EPA on July 1, 2003, http://cfpub.epa.gov/npdes/stormwater/cgp.cfm

Cost of Compliance for Construction based on Acres

Assumption: Start, Inspection and Est. Completion Dates in E25-27 are correct.

0	No. of Acres Disturbed for Common Plan of Development or Sale
	- Change # of Acres to a particular Operators acreage to determine their Cost of Compliai
70%	Implementation Efficiency (100% = doing everything, 0% = did nothing)
50%	Paperwork completeness (SWPPP & NOI) (100% = all done right)

Based on 63 FR 7896 & 1.7% annual inflation since 1997

For Acres: $6382 annual costs for 5 acre site, $882 in fixed NOI/SWPPP costs

For Case Conclusion Data Sheet: 0.00

$0 Cost of Physical Actions

$86 Cost of Non-Physical Actions (SWPPI

$86 Total Cost of Compliance Saved

Numbers to use for the EPA BEN model:

Capital Investment	$0	01/00/1900
One-Time, Nondepreciable Expenditure:	$172	01/00/1900
Annually Recurring:	$0	01/00/1900
Noncompliance Date:	01/00/1900	
Compliance:	01/30/1900	(Inspection Date + 30 days)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
[Region, Address]
Preliminary Inspection Observations

This form is provided for informational purposes only and does not reflect EPA decisions regarding violations discovered during inspection. EPA retains the ability to pursue an enforcement action for alleged violations it observes. Operators are not obligated to respond to this form.

	PERMIT COVERAGE	
3		Operator unpermitted for _____months (# months unpermitted equals number of violations)
	SWPPP REVIEW	
4		SWPPP not prepared (If no SWPPP, leave elements 5 - 30 blank)
5		SWPPP prepared but prepared after construction start (# of months = # of violations)
6		SWPPP does not identify all potential sources of pollution to include: porta-pottys, fuel tanks, staging areas, waste containers, chemical storage areas, concrete cure, paints, solvents, etc…
7		SWPPP does not identify all operators for the project site and the areas of the site over which each operator has control
8		SWPPP does not have site description, as follows:
	A	Nature of activity in description
	B	Intended sequence of major activities
	C	Total disturbed acreage
	D	General location map
	E	Site map
	F	Site map does not show drainage patterns, slopes, areas of disturbance, locations of major controls, structural practices shown, stabilization practices, offsite materials, waste, borrow or equipment storage ageas, surface waters, discharge points, areas of final stabilization (count each omission under 8F as 1 violation)
	G	Location/description industrial activities, like concrete or asphalt batch plants
9		SWPPP does not:
	A	Describe all pollution control measures (e.g. BMPs)
	B	Describe sequence for implementation
	C	Detail operator(s) responsible for implementation
10		SWPPP does not describe interim stabilization practices

11		SWPPP does not describe permanent stabilization practices
12		SWPPP does not describe a schedule to implement stabilization practices
13		Following dates are not recorded: major grading activities; construction temporarily or permanently ceased; stabilization measures initiated (count each omission under 13 as 1 violation)
14		SWPPP does not have description of structural practices to divert flows from exposed soils, retain flows, or limit runoff from exposed areas
15		SWPPP does not have a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur AFTER construction operations have been completed
16		SWPPP does not describe measures to prevent discharge of solid materials to waters of the US, except as authorized by 404 permit
17		SWPPP does not describe measures to minimize off-site vehicle tracking and generation of dust
18		SWPPP does not include description of construction or waste materials expected to be stored on site w/updates re: controls used to reduce pollutants from these materials
19		SWPPP does not have description of pollutant sources from areas other than construction (asphalt or concrete plants) w/ updates re: controls to reduce pollutants from these materials
20		SWPPP does not identify allowable sources of non-storm water discharges listed in subpart 1.3.B of the CGP
21		SWPPP does not identify/ensure implementation of pollution prevention measures for non-storm water discharges
22		Endangered Species Act documentation is not in SWPPP
23		Historic Properties (Reserved)
24		Copy of permit and/or NOI not in SWPPP (count each omission under 24 as 1 violation)
25		SWPPP is not consistent with requirements specified in applicable sediment and erosion site plans or site permits, or storm water management plans or site permits approved by State, Tribal or local officials (e.g., MS4 requirements)
26		SWPPP has not been updated to remain consistent with changes applicable to protecting surface waters in State, Tribal or local erosion plans
27		Copies of inspection reports have not been retained as part of the SWPPP for 3 years from date permit coverage terminates
28		SWPPP has not been updated/modified to reflect change at site effecting discharge, or where inspections identify SWPPP/BMPs as ineffective, updates to SWPPP regarding modifications to BMPs not made within 7 days of such inspection (count each omission under under 28 as 1 violation)
29		Copy of SWPPP not retained on site
		A SWPPP not made available upon request
30		SWPPP not signed/certified

	INSPECTIONS	
31		Inspections not performed and documented either once every 7 days, or once every 14 days and within 24 hours after storm event greater than 0.5 inches or greater (not required if: temp stabilization; runoff unlikely due to winter conditions; construction during arid periods in arid areas) (Count each failure to inspect and document as one violation).
		No inspections conducted and documented (if True, then leave elements 32-39 blank)
		Number of Inspections expected if performed every 7 days:
		Number of Inspections expected if performed bi-weekly:
		If known, number of days of rainfall of >0.5"
32		Inspections not conducted by qualified personnel
33		All areas disturbed by construction activity or used for storage of materials and which exposed to precipitation not inspected
34		All pollution control measures not inspected to ensure proper operation
35		Discharge locations are not observed and inspected
36		For discharge locations that are not accessible, nearby locations are not inspected
37		Entrance/exit not inspected for off-site tracking
38		Site inspection report does not include: date, name and qualifications of inspector, weather information, location of sediment/pollutant discharge, BMP(s) requiring maintenance, BMP(s) that have failed, BMP(s) that are needed, corrective action required including changes/updates to SWPPP and schedule/dates (count each omission under 38 as 1 violation)
39		Inspection reports not properly signed/certified (count each failure to to sign/certify as 1 violation)
	AVAILABILITY OF RECORDS	
40		Sign/notice not posted
	A	Does not contain copy of complete NOI
	B	Location of SWPPP or contact person for scheduling viewing times where on-site location for SWPPP unavailable not noted on sign
	BEST MANAGEMENT PRACTICES	
41		No velocity dissipation devices located at discharge locations or outfall channels to ensure non-erosive flow to receiving water
42		Control measures are not properly:

	A	Selected, installed and maintained
	B	Maintenance not performed prior to next anticipated storm event
		(count each failure to select, install, maintain each BMP as one violation
43		When sediment escapes the site, it is not removed at a frequency necessary to minimize off-site impacts
44		Litter, construction debris, and construction chemicals exposed to storm water are not prevented from becoming a pollutant source (e.g. screening outfalls, pickup daily, etc.)
45		Stabilization measures are not initiated as soon as practible on portions of the site where construction activities have temporarily or permanently ceased within 14 days after such cessation
		*Exceptions:
		(a) Snow or frozen ground conditions
		(b) Activities will be resumed within 14 days
		(c) Arid or Semi-arid areas (<20 inches per year)
46		Common Drainage of 10+ acres does not have a sedimentation basin for the 2 year, 24 hour storm, or 3600 cubic ft. storage per acre drained
	A	Where sedimentation basin not attainable, smaller sediment basins, sediment traps, or erosion controls not implemented for downslope boundaries
	B	Sediment not removed from sediment basin or traps when design capacity reduced by 50% or more
47		Common Drainage less than 10 acres does not have sediment traps, silt fences, vegetative buffer strips, or equivalent sediment controls for all down slope boundaries (not required if sedimentation sediment basin meeting criteria in 46 above)
	A	Sediment not removed from sediment trap when design capacity reduced by 50% or more
	SMALL BUSINESS EVALUATION	
48		Is the Owner/Operator a Small Business?
		A small business is defined by EPA's Small Business Compliance Policy as: "a person, corporation, partnership, or other entity that employs 100 or fewer indiviudals (across all facilities and operations owned by the small business)." The number of employees should be considered as full-time equivalents on an annual basis, including contract employees (see 40 CFR 372.3). A full time employee unit is 2000 hours worked per year.

Fields of Opportunities

STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES
CHUCK GIPP, DIRECTOR

CERTIFIED MAIL

June 8, 2016

Steve Cooper
City of Marion
1225 6th Ave.
Marion, IA 52302

RE: Municipal Separate Storm Sewer Permit (MS4) permit assistance visit, Permit No. 57-51-0-02

Dear Mr. Cooper:

On May 9, 2016, I conducted a compliance assistance visit of the City's MS4 program. Enclosed is the report resulting from the visit. A summary of findings is included at the conclusion of the report.

As we discussed, this visit was not an inspection but rather a permit assistance visit. Its purpose was to help the City understand its obligations under the MS4 permit and to note any areas of the City's program which may be inconsistent with the permit requirements. The report does not require the City to implement any measures or respond to this letter though it does caution that some of the inconsistencies found during the visit could be considered violations should a comprehensive inspection be conducted by the Department or EPA.

If you have any questions or comments concerning this matter please contact me at 515-725-8417 or at joe.griffin@dnr.iowa.gov

Sincerely,

Joe Griffin
NPDES Section
Environmental Protection Division

Enclosure: Report of Assistance Visit

cc: Field Office 1 with enclosure

IOWA DEPARTMENT OF NATURAL RESOURCES Storm Water Program 502 E. 9th St., Des Moines, Iowa 50319-0034 Phone: (515) 725-8417 FAX: (515) 725-8202		
REPORT OF ASSISTANCE VISIT		
VISIT DATE	**CURRENT:** May 9, 2016	**PREVIOUS:**
TO:	City of Marion 1225 6th Ave. Marion, IA 52302	
SUBJECT:	Storm Water MS4 Assistance Visit Iowa NPDES Permit No: 57-51-0-02	
PERSONS CONTACTED:	Steve Cooper – Storm Water Coordinator	

AUTHENTICATION	
DEPARTMENT CONTACT: Joe Griffin, Storm Water Coordinator, Environmental Specialist Sr.	**DATE:** 6/8/16

Introduction

A permit assistance visit was made on May 9, 2016 to the Marion Municipal Separate Storm Sewer System (MS4) program. The visit was to evaluate efforts by the City to comply with its MS4 permit and provide input to assist in this. The City's current permit was issued on September 1, 2015 and expires August 31, 2020 and covers all areas within the city limits served by the MS4. DNR personnel present during the visit was Joe Griffin of the central office.

The MS4 permits contain many requirements, most of which are classified into six minimum control measures. The requirements in three of these measures were examined during this visit. These were Illicit Discharge Detection and Elimination, Construction Site Storm Water Runoff Control and Post-construction Storm Water Management. Activities the City has implemented to comply with the requirements included in these three measures were discussed and evaluated.

Illicit Discharge Detection and Elimination

The City's illicit discharge ordinance was adopted in November of 2005. An examination of the ordinance indicates that its contents meets the requirements in the MS4 permit.

A discussion of the City's illicit detection and elimination program indicates all outfalls have been checked for the presence of illicit discharges during dry weather flow conditions and that outfalls downstream of active construction sites continue to be checked. A visual inspection is made with samples taken and analyzed if conditions warrant. Some outfalls that are not downstream of active construction sites are also

repeatedly checked though the City understands this is not a requirement of the permit. It was reported that no cross connections from sanitary piping have been found though other type of illicit discharges have been.

The City has a map of its public storm sewer system including all outfalls and piping. The City televises new additions to its storm sewer system.

Street sweepings are usually taken to a landfill for disposal except during the fall. At this time, leaves are removed and used at the yard waste facility.

Construction Site Storm Water Runoff Control

The City's erosion and sediment control and stormwater management ordinance was adopted in November of 2006. An examination of the ordinance indicates that its contents meets the requirements in the MS4 permit.

The City has 1 FTE to enforce the storm water requirements. Other City inspectors are trained to recognize deficiencies and contact the Storm Water Coordinator (SWC).

Approximately 180-200 single family dwellings are built each year.

The program is funded by a storm water utility fee currently levied at a rate of $1.59/Equivalent Residential Unit (ERU)/month plus a monthly service fee of $3.33 for each account. An ERU is defined as 2,791 ft^2 of impervious area. Residential units are charged for one ERU per residence unit though parcels with less than 1395 ft^2 are not charged. Non-residential property is charged based on the number of ERUs at the site. A maximum fee of $156.80 is charged per contiguous parcel account. Credits are allowed based on peak flow control, volume reduction and water quality control.

The City has grading and building permits and both a major and a minor erosion control permit. The major erosion control permit is issued to sites where 1 acre or more of ground will be disturbed. The minor erosion control permit is issued to sites where from 1/8 up to 1 acre will be disturbed. The applicant must submit the Department issued authorization number before a major erosion control permit will be issued.

The SWPPP is submitted with the permit application and is reviewed by the SWC for both completeness and effectiveness. If the SWPPP does not meet GP2 requirements or the reviewer believes the controls are inadequate, the deficiencies must be satisfactorily addressed before construction activities are allowed to commence. The reviewer does visit the site. Few, if any, SWPPPs are accepted at the first submission. Both a gravel entrance and downslope perimeter controls must be in place before soil-disturbing activities are allowed to commence.

The City does not require that SWPPPs be prepared by a credentialed individual though most are prepared by engineering firms.

The City requires a site plan be submitted with the minor erosion control permit application which would be required for house lots in residential developments. It was reported the City is planning to upgrade its requirements for these submittals. The City is reminded of the SWPPP requirements and these site plans must conform to these requirements. The City is urged to expedite its process to increase the requirements for these submittals to conform to the SWPPP requirements found in GP2.

The City does not require transfer agreements be submitted. It is recommended the City consider requiring these agreements be submitted to ensure the City is fully aware of any required permitting necessary for compliance prior to issuing permits for house building.

Quarterly inspections are conducted on the developments during the housebuilding phase but the City does not consistently ensure that weekly inspections are being conducted by the permittees as directed by GP2 nor are SWPPPs for the lots viewed during the City's inspections. The City is reminded it is a requirement of the MS4 permit that the City ensure and document that these weekly inspections are conducted by GP2 permittees and that SWPPPs be updated. The absence of this documentation would be noted as a violation should a comprehensive inspection be conducted by the Department or EPA.

Permittees are notified prior to inspections. Violations are noted on less than ½ of residential and approximately 1/3 of commercial inspections. It is recommended that permittees not be notified prior to inspections.

When violations are noted during an inspection, a phone call is made to the responsible party. Approximately 1 day, depending upon the violation, is given to rectify the situation. Improper concrete washout violations must be corrected immediately. If violations noted are not addressed in the stipulated amount of time, a Notice of Violation is sent. Typically, 3 days to 1 week is allowed to correct the deficiencies. Should the violations not be corrected in the time allowed, the matter is referred to the City attorney.

The City has provisions for stop work orders and fines. No stop work orders have been issued though a few fines have been levied. There is no system for classifying habitual offenders. The City may wish to consider implementing a system in which such offenders are penalized more quickly and severely by the use of stop work orders as the goal of the program is to prevent violations rather than react to them.

Informal inspections are conducted between the quarterly inspections and other city employees also observe sites when in the area and report questionable conditions.

Trackout is required to be removed by the end of the working day.

The City reports the most common complaints are regarding trackout and water runoff issues. No fee is charged for investigating complaints during which violations are found. The City may wish to consider charging such a fee when complaints are found to be valid.

City projects are inspected weekly by City personnel.

The City requires designated concrete washouts to be contained and pits lined. Signage is required. When improper concrete washout is documented, the responsible company is sometimes contacted. The Department recommends that a manager at the concrete company owning the truck always be officially contacted and also the GP2 permittee with both being reminded of their responsibilities.

It was reported that the 14/21 day rule for stabilization of areas is being enforced. If a permittee is ordered to comply with this requirement, a follow-up inspection is conducted to ensure compliance is achieved.

It was reported that the SWC checks for topsoil stockpile(s) when reviewing the SWPPP and that removal of the topsoil from the development is not allowed. It is required that the topsoil be respread after the development phase is completed. However, the City does not check to ensure topsoil has been preserved on

building lots after the houses have been constructed. The City is reminded of the GP2 topsoil preservation requirements to preserve topsoil, unless infeasible.

The City does not require permittees to copy the City when a notice of discontinuation (NOD) is sent to the Department.

It is not a requirement of the MS4 permit but the Department requests the City require permittees to copy the City when NODs are sent to the Department as this would minimize the instances of invalid NODs being submitted. Should the GP2 permittee discontinue a site prematurely and the Department terminates permit coverage, the City would still be responsible for requiring compliance and inspection of these sites. This would include requiring the GP2 permittee to reinstate permit coverage should such permit coverage be prematurely discontinued.

The City is aware of the storm water database but was not aware of the auto e-mail alert system. During the visit, the City subscribed to the auto e-mail system which allows it to more timely receive information on the status of storm water permitting.

During the visit, five construction sites were visited. At Gemstone Estates, 25739-25492, the site had been graded and houses were being constructed. Much of the site was inadequately stabilized and drained to the SW corner where the silt fence was in a state of disrepair. It was observed that concrete washout had occurred contrary to City requirements. At Aspen Ridge Estates, 24902-24646, there was a concrete washout rather near a storm sewer intake though it was not observed that any washout had recently been discharged to the storm sewer. There were some stabilization issues also observed. No issues were observed at the other three sites visited.

Post-construction Storm Water Management

The City's post-construction storm water management ordinance was passed in November of 2010. An examination of the ordinance indicates its contents meet the requirements in the MS4 permit.

The ordinance requires the implementation of post-construction runoff management practices for lots with an area of one acre or more which are not single-family residential lots. Lots of less than one acre but with an impervious area of greater than 11,000 ft^2. Post-construction facilities shall be designed to conform with requirements in the Iowa Storm Water Management Manual and the SUDAS Manual. These requirements include detaining water so the maximum discharge rate after development is no greater than the 5 year predevelopment rate plus the upstream runoff. Discharges from events greater than the 100 year storm event are bypassed at the rate necessary to protect the infrastructure.

Post-construction structures intended to serve single-family residential development are publicly owned and maintained. Other structures may be publicly or privately owned and maintained. The City currently has 137 post-construction structures mapped of which 33 are City-owned.

The City inspects City-owned structures. An easement agreement is required for publicly owned structures.

If privately-owned structures are not properly maintained, the owner(s) are notified. If deficiencies are not corrected, the City can conduct the maintenance and bill the owner(s).

Major waterways that drain the City include Indian Creek and Squaw Creek and a comprehensive watershed assessment has been performed.

Recommendations and Permit Requirements

The City requires a site plan be submitted with the minor erosion control permit application which would be required for house lots in residential developments. It was reported the City is planning to upgrade its requirements for these submittals. The City is reminded of the SWPPP requirements and these site plans must conform to these requirements. The City is urged to expedite its process to increase the requirements for these submittals to conform to the SWPPP requirements found in GP2.

The City does not require transfer agreements be submitted. It is recommended the City consider requiring these agreements be submitted to ensure the City is fully aware of any required permitting necessary for compliance prior to issuing permits for house building.

Quarterly inspections are conducted on the developments during the housebuilding phase but the City does not consistently ensure that weekly inspections are being conducted by the permittees as directed by GP2 nor are SWPPPs for the lots viewed during the City's inspections. The City is reminded it is a requirement of the MS4 permit that the City ensure and document that these weekly inspections are conducted by GP2 permittees and that SWPPPs be updated. The absence of this documentation would be noted as a violation should a comprehensive inspection be conducted by the Department or EPA.

Permittees are notified prior to inspections. Violations are noted on less than ½ of residential and approximately 1/3 of commercial inspections. It is recommended that permittees not be notified prior to inspections.

The City has provisions for stop work orders and fines. No stop work orders have been issued though a few fines have been levied. There is no system for classifying habitual offenders. The City may wish to consider implementing a system in which such offenders are penalized more quickly and severely by the use of stop work orders as the goal of the program is to prevent violations rather than react to them.

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City of MARION IOWA

Stormwater Pollution Prevention Regulations, Policies, and Procedures

Steve Cooper
Stormwater Coordinator

What's this about?

IOWA DEPARTMENT OF NATURAL RESOURCES

National Pollutant Discharge Elimination System (NPDES)

Municipal Separate Storm Sewer System (MS4)

General Permit #2 Storm Water Discharge Associated with Construction Activities

MARION Engineering Department

What's this about?

Approximately 40% of the nation's waterways have been identified as impaired, meaning that they do not meet the water quality standards for their intended use. In Iowa, the most common reason for a waterway to be designated as impaired is due to high levels of suspended sediment. One of the main sources of suspended sediment found in waterways is construction site stormwater runoff.

SUDAS

MARION Engineering Department

What's this about?

MARION Engineering Department

THIS is what it's about.

MARION Engineering Department

Why?

EPA visit December 2015

IDNR visit May 2016

They will be back

MARION Engineering Department

Why?

STATE OF IOWA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

MARION Engineering Department

Are these new requirements?

No.

They've been in the Marion Municipal Code and IDNR General Permit #2 (GP#2) for more than a decade.

There are, however, a few new enforcement procedures.

MARION Engineering Department

Today's Takeaways:

- Know the regulations
- Who is responsible for what on construction sites?
- What the City of Marion does to ensure compliance
- Violations & Penalties

Typically there are more pictures than words. But the information covered today is what you are required to do, and penalties if you do not do them. So this will be more words than pictures.

MARION Engineering Department

Regulations – Federal

MARION Engineering Department

Regulations – State

DNR

GP#2

Developers, builders, contractors

MS4

(the reason I have to keep an eye on construction sites)

MARION Engineering Department

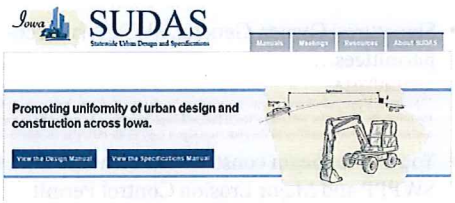
Regulations – Local

- Chapter 155: Erosion and Sediment Control
  - adopted November 2006
- Chapter 156: Storm Water Management
  - adopted November 2010
- Chapter 91: Illicit Discharge to Storm Sewer System
  - adopted November 2005

- 1/8 Acre (5,500 s.f. ±) to 1 Acre = Minor Erosion Control Permit
- Over an Acre = Major Erosion Control Permit & GP#2

MARION Engineering Department

Regulations – Statewide Standards



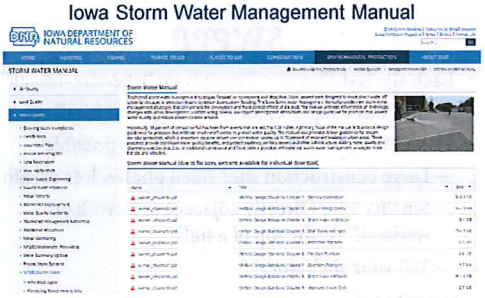
Adopted December 2015

*Design Manual Chapter 7: Erosion and Sediment Control

MARION Engineering Department

Statewide Best Practices Guidelines

Iowa Storm Water Management Manual



MARION Engineering Department

MARION Engineering Department

Constructing in Marion?

MARION Engineering Department

Major Construction in Marion

- Preliminary Plat
- Final Plat
- Development Agreement
- Etc…

MARION Engineering Department

Major Construction in Marion

- Submit engineering plans for review
- Requires a Stormwater Pollution Prevention Plan (SWPPP)
  - This is required by both IDNR GP#2 and Marion Code
- SWPPP development – that is a separate workshop
  - not covered in Civil or Environmental Engineering college degree programs
  - Marion does not currently require certifications or credentials for SWPPP preparations. Mostly because there are few such certifications available. ISWEP is working on it. This will be required in the future.

MARION Engineering Department

Major Construction in Marion

SWPPP

- Each site is different – There is no "one-size-fits-all"
  - EPA has templates for both large and small sites
- SWPPP review will be as consistent as possible
  - Large construction site? Need phases, lots of info…
  - Smaller site? Directly adjacent to a creek or wetland? At the top of a hill?
  - Tell your site's story!

MARION Engineering Department

Major Construction in Marion

- Signatures: Owner, General, SWPPP, subs/co-permittees…

GP#2 Part IV.D.7.A

"The storm water pollution prevention plan must clearly identify for each measure in the plan, the contractor(s) and/or subcontractor(s) that will implement the measure. All contractors and subcontractors identified in the plan must sign a copy of the certification statement…"

- You cannot begin construction activities until the SWPPP and Major Erosion Control Permit Application is approved
  - Penalties will be covered later. (Spoiler alert: the EPA penalty for construction without a SWPPP is $5,000)

MARION Engineering Department

Major Construction in Marion

Stormwater Pollution Prevention Plans

The EPA can impose penalties of up to $37,500 per day for violations of a policy that there is currently no formal education or training on.

MARION Engineering Department

Major Construction in Marion

City of Marion

EROSION CONTROL PERMIT APPLICATION
MAJOR
(Disturbing MORE than one acre)

The undersigned makes application for a Major Erosion Control Permit as follows:

Property Owner: _____

Property Address or Legal Description: _____

Applicant (if other than Owner): _____

Applicant Address (if other than Owner): _____

Applicant Email: _____

Applicant Phone Number: _____ ☐ Mobile ☐ Home ☐ Business

Cubic yards of fill placed on the site: _____ Area of land-disturbing activity (acres): _____

This Major Erosion Control Permit Application shall include:

- A Stormwater Pollution Prevention Plan (SWPPP) shall be submitted that conforms to the requirements of General Permit No. 2 issued by the Iowa Department of Natural Resources. Major erosion control permits are only valid for sites covered under General Permit No. 2 issued by the Iowa DNR. The SWPPP must be submitted to the City of Marion.
- Complete 24 hour contact information for the site owner and the person in responsible charge of providing and monitoring sedimentation and erosion control for the site.
- Payment of the $100 permit fee. (Make out to City Treasurer in cash, check, or money order.)

Applicant affirms that applicant is the property owner or is authorized by the property owner to make this application, and that the application is accurate to the best of the applicant's knowledge. Proposed fill and/or cut are subject to assessment and deed restrictions of record. If the application and permit if granted are subject to all laws of the State of Iowa and Ordinances of the City of Marion, Iowa.

By signing below, the applicant acknowledges that he/she has read and is aware of the requirements established in the Marion Municipal Code Chapter 53 Erosion and Sediment Control Chapter 195 Storm Water Management Chapter 91 Illicit Discharge to Storm Sewer Systems and Iowa DNR General Permit No. 2. Applicant certifies that the land disturbing activities described in this application will be conducted in a manner that will ensure compliance with the Marion Municipal Code and Iowa DNR General Permit No. 2.

The owner/applicant shall be responsible for the removal of all debris spilled or scattered onto adjoining properties and City right-of-way during construction.

Applicant Signature: _____ Date: _____

For Engineering Department Use Only

Receipt Date: _____ Staff Approval: _____

Permit Number: _____ PERMIT EXPIRES ONE YEAR FROM INVOICE

MARION Engineering Department

Major Construction in Marion

Approved SWPPP? Construction starts. So does SWPPP inspections and documentation…

GP#2 Part IV.D.4

"Qualified personnel (provided by the discharger) shall inspect disturbed areas of the construction site that have not been stabilized with a perennial, vegetative cover of sufficient density to preclude erosion at least once every seven calendar days."

GP#2 Part IV.C.

"The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance…"

GP#2 Part V.B

"If the SWPPP plan is maintained at an off-site location such as a corporate office, it shall be provided for inspection no later than three hours after being requested."

GP#2 Part IV.B.3

"Unless otherwise provided by the Department, the permittee shall have 3 business days after such notification to make the necessary changes."

MARION Engineering Department

Major Construction in Marion

…as well as site management:

GP#2 Part IV.D.2.C(2)

"Off-site vehicle tracking of sediments shall be minimized."

GP#2 Part IV.D.2.C(1)

"All wastes composed of building materials must be removed from the site for disposal in permitted disposal facilities. No building material wastes or unused building materials shall be buried, dumped, or discharged at the site."

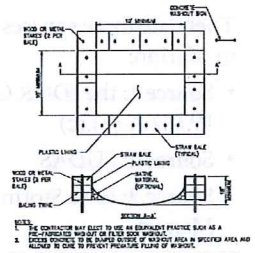
MARION Engineering Department

Major Construction in Marion

Concrete pouring & washouts

Design is regulated (details?), but not the use

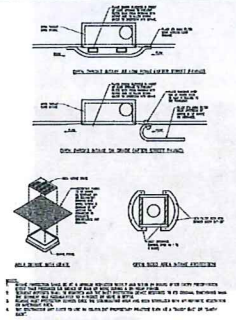
How to use a washout!



1 **CONCRETE WASHOUT DETAIL**
NOT TO SCALE

MARION Engineering Department

Major Construction in Marion



2 **TYPICAL INTAKE PROTECTION DETAILS**
NOT TO SCALE

Inlet protection

This is tricky. Again – no one-size-fits- all solution.

Stay on top of things!

It's YOUR responsibility to maintain this. Be aware of what's going on. Check on it after rain. Does it need to be cleaned up? Is it snowing?

MARION Engineering Department

Major Construction in Marion

Marion Quarterly Inspections

- Marion's National Pollutant Discharge Elimination Municipal Separate (NPDES) Storm Sewer System (MS4) permit Part II.D addressing Construction Site Storm Water Runoff Control requires that City staff conduct quarterly inspections of all active GP2 sites.
- Permit holders will not be contacted prior to inspections.
- If SWPPP docs are on-site I will inspect them without notice. If they are not on-site you will have 3 hours to produce them. (I'll call you and make arrangements. I'll try to be flexible, but the requirement is 3 hours.)

MARION Engineering Department

Major Construction in Marion

FACT:

It costs less to keep the soil on your construction site than it does to clean it up after it washes off your site.

FACT:

Rain WILL wash soil off your construction site if the soil on your site is not stabilized.

MARION Engineering Department

Major Construction in Marion

Final Grading and Easements

21/14 rule

GP#2 Part IV.D.2.A.(1)

"Stabilization measures shall be initiated on all disturbed areas as soon as practical but in no case where construction activity will not occur for a period of 21 or more calendar days later than the 14th day after no construction activity has occurred on such area."

This is going away in 2017.
Immediate stabilization will be required.

Protect easements and drainageways. Convey info to builders.

MARION Engineering Department

Major Construction in Marion

Bottom Line:

This is YOUR site

This is YOUR responsibility

KNOW:

What's going on

Your requirements and responsibilities

Who is doing what jobs on your site

(and what you are paying them to do)

MARION Engineering Department

TOPSOIL

MARION Engineering Department

Topsoil

There are three sources for topsoil requirements in Marion:

- Source 1: the IDNR General Permit #2 Part IV.D.2.A.(2).(c)
- Source 2: SUDAS
- Source 3: Iowa Storm Water Management Manual

MARION Engineering Department

Topsoil – Source 1

IDNR General Permit #2 Part IV.D.2.A.(2).(c)

The permittee(s) shall minimize soil compaction and, unless infeasible, preserve topsoil. "Infeasible" shall mean not technologically possible, or not economically practicable and achievable in light of the best industry practices. "Unless infeasible, preserve topsoil" shall mean that, unless infeasible, topsoil from any areas of the site where the surface of the ground for the permitted construction activities is disturbed shall remain within the area covered by the applicable General Permit No. 2 authorization.

MARION Engineering Department

Topsoil – Source 2

SUDAS

2.02 STRIPPING, SALVAGING, AND SPREADING TOPSOIL

A. Stripping and Salvaging Topsoil:

1. Mow all weeds, grass, and growing crops or other herbaceous vegetation close to the ground and remove from the site. Break soil by shallow plowing or tilledng and thoroughly mix the material to allow the soil to be easily spread in a thin layer over areas to be covered if allowed by the Engineer. Herbicides may be applied, and vegetation may be incorporated into the topsoil.
2. Remove an adequate amount of topsoil from the upper 12 inches of existing on-site topsoil to allow finish grading with a finished grade of 4 inches of salvaged or amended topsoil. The topsoil may be trowed directly to an area where it is to be used, or may be stockpiled for future use.

B. Preparation for Topsoil Placement:

1. Finish excavation and embankment work according to the specified grades and cross-sections; grade and shape all surfaces to drain away from buildings and prevent ponding. Conform to the grading plan within ± 2 inches.
2. Loosen surface to a minimum depth of 4 inches to reduce compaction.

C. Topsoil Spreading and Finish Grading:

1. Place the topsoil after all grading and trenching activities in the area have been completed.
2. Place topsoil at least 8 inches deep; smooth and finished grade according to the contract documents. If topsoil is being amended with compost, thoroughly blend compost with on-site topsoil at the rate specified in Section 2010.2.01.
3. After finish grading the topsoil, remove clods, lumps, rocks, litter, other undesirable material or stones larger than 1 inch (1/2 inch for turfgrass).

2.01 TOPSOIL

Use suitable topsoil of uniform quality, free from hard clods, roots, and stiff clay, hard pan, stones larger than 1 inch (1/2 inch for turfgrass seeding), lime cement, ash, slag, concrete, tar residue, tarred paper, boards, chips, sticks, or any undesirable material.

Use on-site topsoil, unless compost amended or off-site topsoil is specified.

A. On-site Topsoil: On site topsoil material is material excavated from the top 12 inches of the site. Use of on-site topsoil material is subject to the Engineer's approval.

B. Compost-amended On-site Topsoil: Amend low-quality on site topsoil, not meeting the requirements specified for off site topsoil, with a minimum of 1 inch of compost for every 3 inches of topsoil. Use compost meeting the requirements of mulch for pneumatic seeding in Section 9016.2.07

C. Off-site Topsoil: Contains at least 3% organic matter according to ASTM D 2974, has a high degree of fertility, is free of herbicides that prohibit plant growth, has a pH level between 6.0 and 8.0, and meets the following mechanical analysis requirements.

Sieve	Percent Passing
1"	100
1/2"	95* to 97*
1/4"	40 to 90
No. 100	40 to 90
No. 200	10 to 30

* 100% for turfgrass

The Engineer will approve the source of off-site topsoil. Surface soils from ditch bottoms, retained ponds, and eroded areas, or soils that are supporting growth of noxious weeds or other undesirable vegetation, will not be accepted. The Engineer will determine if testing is necessary. The Contractor will be responsible for payment of the testing if the off-site topsoil does not meet the above requirements. If the testing verifies the off-site topsoil does meet the above requirements, payment for the testing will be the responsibility of the Jurisdiction.

MARION Engineering Department

Topsoil – Source 3

Iowa Storm Water Management Manual

Chapter 5- Section 6 Soil Quality Management and Restoration

BENEFITS Low = <30% Medium = 30-65% High = 65-100%			
	Low	Med	High
Suspended Solids	✓	✓	✓
Nitrogen	✓	✓	
Phosphorous	✓		
Metals	✓	✓	✓
Bacteriological	✓	✓	✓
Hydrocarbons	✓	✓	✓

Description: Soil quality management preserves and protects intact soil profiles from land disturbing activities. These activities often significantly alter the characteristics of the soil profile. Soil quality restoration (SQR) reduces compaction, increases pore space, improves organic matter content, and re-establishes populations of soil dwelling organisms (microbes, worms, insects, etc.) on soils disturbed during construction. Recreating the original soil profile after construction is not likely to be achieved. This chapter describes methods of creating a healthy soil profile which restore the ability of the soil to absorb water after construction is completed.

MARION Engineering Department

Residential Development

MARION Engineering Department

Transfer Of Ownership Agreements

Transfer Of Ownership

GP#2 Part II.F

"For construction activity which is part of a larger common plan of development such as a housing or commercial development project, if a permittee transfers ownership of all or any part of property subject to this permit, both the permittee and transferee shall be responsible for compliance with the provisions of this permit for that portion of the project which has been transferred including when the transferred property is less than one acre in area. If the new owner(s) agree in writing to be solely responsible for compliance with the provisions of this permit for the property which has been transferred, then the existing permittee(s) shall be relieved of responsibility for compliance with this permit for the transferred property, from and after the date the Department receives written notice of transfer of responsibility. A copy of the notice of transfer of responsibility shall be included in the pollution prevention plan. ."

SUDAS Design Manual Chapter 7B.E. (Erosion and Sediment Control Regulatory Requirements)

Coverage under General Permit No. 2 cannot be discontinued for individual portions of a project; the permit requires that the entire project reach final stabilization before a Notice of Discontinuation can be filed, and coverage for the entire site terminated." This section also refers to the Iowa Administrative Code [567 IAC 64.6(6)(b)] which states "...both the permittee and transferee shall be responsible for compliance with the provisions of the general permit..."

MARION Engineering Department

Transfer Of Ownership Agreements

Do you need Transfer Of Ownership Agreements for your development?

NO	YES
You or your company retain ownership of the individual lots and build the houses	You sell individual lots in your development to people who build their own houses

MARION Engineering Department

Transfer Agreements - Developers

- If you are the owner of a residential development with GP#2 coverage and...
- If you sell lots within this development to another person or company...
- You are required to have an agreement with buyer on how stormwater pollution prevention will be handled on the lot(s).
- Will the buyer agree to comply with your SWPPP for the development? ("Same" Authorization) If so, you will both be responsible for compliance.
- Will the buyer get their own SWPPP and GP#2 and take care of all stormwater pollution prevention for the lot(s)? ("Separate" Authorization) If so, you are off the hook for that particular property.
  - The buyer – before being issues a building permit – must now develop a SWPPP for that lot, obtain their own GP#2 for that lot, and do all the same 7-day inspections and SWPPP document maintenance that you do for your development.

MARION Engineering Department

Transfer Agreements - Builders

- If you are a builder who buys individual lots from an owner of a residential development with GP#2 coverage...
- You are required to have an agreement with seller on how stormwater pollution prevention will be handled on the lot(s).
- Will you agree to comply with the seller's SWPPP for the development? ("Same" Authorization) If so, you will both be responsible for compliance.
- Will you get your own SWPPP and GP#2 and take care of all stormwater pollution prevention for the lot(s) you are buying? ("Separate" Authorization) If so, you take full responsibility for stormwater pollution prevention on the property you are buying.
  - Before being issues a building permit – you must now develop a SWPPP for that lot, obtain your own GP#2 for that lot, and do all the same 7-day inspections and SWPPP document maintenance that the seller does for the development.

MARION Engineering Department

Transfer Of Ownership Agreements

Transfer Agreements Comparison "Separate and Same Authorization"

Summary	
Same Authorization	Separate Authorization
Mutual agreement that the Buyer will comply with all requirements of the Developer's General Permit #2 and SWPPP for the purchased lot(s).	Mutual agreement that the Buyer releases the Developer of all responsibility for stormwater pollution prevention for the purchased lot(s). Buyer is required to obtain a new General Permit #2 (GP#2) for the lots(s).

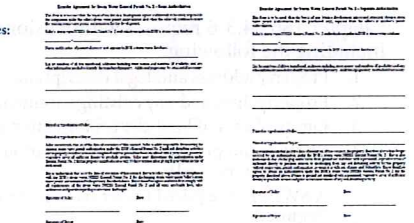
The full requirement in the Iowa Administrative Code Chapter 567.64.6(6)

Same Authorization	Separate Authorization
Documentation	
1) The Buyer is notified in writing of the existence and location of the general permit and Stormwater Pollution Prevention Plan (SWPPP) for the development. Proof of this notice must be provided to the City. 2) Buyer signs the Developer's SWPPP as co-permittee.	1) Buyer is required to obtain a new GP#2 for the lots(s). (No Public Notice is required to be submitted with the NOL) 2) A SWPPP specific to the lot is submitted and approved by the City. SWPPP Owner's Certificate and Transfer Agreement must be included in the SWPPP. * The EPA has guides and templates available to help with these. EPA small site SWPPP Guide EPA Residential SWPPP Template

MARION Engineering Department

Transfer Of Ownership Agreements

IDNR Samples:



Or you can develop your own

MARION Engineering Department

Transfer Of Ownership Agreements

Marion is not required to actually regulate how GP#2 holders do their transfer agreements. We are required to inspect their sites every three months to make sure they have the necessary transfer agreements. If they do not, we are required to notify them of that violation. If the Violation is not corrected, the City can impose penalties.

MARION Engineering Department

PLAN REVIEW

MARION Engineering Department

Individual building sites plan review

You come in for a building permit.

Your building plans must comply with the building code.

You will also need a Minor Erosion Control Permit.

Marion Municipal Code Chapter 155 - Erosion and Sediment Control (Section 155.04.3) requires a Minor Erosion Control Permit Application that includes:

MARION Engineering Department

Individual building sites plan review

A completed Application for Erosion Control Permit on a form provided by the City

City of Marion

EROSION CONTROL PERMIT APPLICATION

MINOR

(Disturbing ≥2.5 but one acre)

The undersigned makes application for a Minor Erosion Control Permit as follows:

Property Owner: _____

Property Address or Legal Description: _____

Applicant (name not owner): _____

Applicant Address (not owner address): _____

Applicant Email: _____

Applicant Phone Number: _____ ☐ Mobile ☐ Home ☐ Business

The Minor Erosion Control Permit Application shall include:

- A Grading and Erosion Control Plan shall be submitted as defined in the Marion Code Chapter 155 – Erosion and Sediment Control. This shall include dimensional site plan including but not limited to: address or legal description, existing and proposed elevations, lot lines, property lines, and easements of record.
- Payment of the $25 permit fee. (Fees are only required of both minor PMAs.)

Applicant affirms that applicant is the property owner or is authorized by the property owner to make this application, and that the information is accurate to the best of the Applicant's knowledge. Proposed lot activities are subject to easement and deed restrictions of record. This application and permit if granted are subject to all laws of the State of Iowa and Ordinances of the City of Marion, Iowa.

By signing below, the applicant acknowledges that he/she has read and is aware of the requirements established in the Marion Municipal Code Chapter 155 Erosion and Sediment Control, Chapter 159 Storm Water Management and Chapter 51 Illicit Discharge to Storm Sewer System. Applicant certifies that the land disturbing activities described in this application will be conducted in a manner that will ensure compliance with the Marion Municipal Code.

The permit applicant shall be responsible for the removal of all debris spilled or washed onto adjoining properties and City right-of-way during construction.

Applicant Signature: _____ Date: _____

For Engineering Department Use Only

Receipt No: _____ Staff Approval: _____

PERMIT EXPIRES ONE YEAR FROM ISSUANCE

MARION Engineering Department

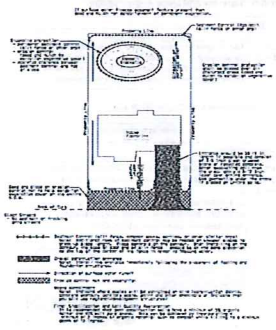
Individual building sites plan review

Chapter 155.04.3.B requires a dimensioned drawing including the following:

1. Property address and legal description;
2. Property lines and any existing easements of record;
3. Limits of area of land-disturbing activities;
4. Existing and proposed ground elevations (two-foot maximum interval);
5. A SWPPP if required under section 155.07, SWPPP Required.
6. Other information as required by the Erosion Control Officer.

MARION Engineering Department

Individual building sites plan review



Wood mulch from lumber waste covers bare ground.

MARION Engineering Department

Individual building sites plan review

MARION Engineering Department

Individual building sites plan review

Some standard individual site plan contents:

- Detailed site plan showing drainage flows onto, through and off of your site.
  - It's just as important to protect your site from water and sediment flowing ONTO it as it is to keep water and sediment from flowing OFF your site.
- Erosion control: much, straw matting, etc…
- Sediment control: staked-in filter sock may be adequate, but silt fence may be necessary.
- Show the location and design details for a concrete washout.
- Show what's happening on adjacent lots.
- Stockpiles: Where are they going? Staying on site? Trucked off? Schedule?
- Show locations for covered dumpster, materials/equipment storage, etc.

MARION Engineering Department

Individual building sites plan review

"Other information as required"…

- Transfer Of Ownership Agreement?
  - If yes, but you don't have one, permit will not be issued.
- Show drainage easements and/or drainage swales that have been designated on the site and how these will be protected from construction activities. Larger swales/easements will need actual silt fence.
- Topsoil – method of stripping, preserving, and re-spreading
- ***New software is being implemented in September to manage this.

MARION Engineering Department

CONSTRUCTION

MARION Engineering Department

Individual building sites construction

Approved Minor Erosion Control Permit Application?

Start Construction

Install perimeter erosion and sediment controls

Call for a sanitary inspection

MARION Engineering Department

Individual building sites construction

Current sanitary inspections:

- Sanitary connection to code?
- Measure distance from MH
- Erosion & Sediment Control in place

MARION Engineering Department

Individual building sites construction

Sanitary inspections will now also include:

- Erosion & Sediment Control:
  - Does it match the plan submitted with the building permit?
  - Filter sock – is it staked in?
  - Silt fence – properly installed?
  - Upstream – are measures in place to prevent water/soil from washing onto the site from upstream properties?
- Drainage swales and easements – are they protected?
- Concrete washout?
- Rock drive?

MARION Engineering Department

NOTICE OF DISCONTINUATION

OF A STORM WATER DISCHARGE
COVERED UNDER IOWA NPDES GENERAL PERMIT NO. 1
FOR INDUSTRIAL ACTIVITIES

Name of the owner or facility to which the storm water discharge general permit coverage was issued: _____

County: _____

List the complete permit authorization number for the discharge. This number is provided on the bottom of the authorization sheet.

IA- _____ - _____

List the date the storm water discharge was discontinued: _____

The following certification must be signed in accordance with the signatory requirements of the general permit (see back side)

I certify under penalty of law that all storm water discharges associated with industrial activity from this facility that are authorized by NPDES General Permit No. 1 have been eliminated. I understand that by submitting this Notice of Discontinuation, I am no longer authorized to discharge storm water associated with industrial activity by Iowa Department of Natural Resources NPDES General Permit No. 1 and that discharging pollutants from storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by an NPDES permit.

I further certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

Name (print) _____ Title _____

Signature _____ Date _____

Return to: Storm Water Coordinator
Department of Natural Resources
502 E. 9th Street
Des Moines, IA 50319-0034

MARION Engineering Department

NOD

"*Final Stabilization*" means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70% for the area has been established or equivalent stabilization measures have been employed or which has been returned to agricultural production.

It is not a requirement of the MS4 permit but IDNR requests the City require permittees to copy the City when NODs are sent to IDNR as this would minimize the instances of invalid NODs being submitted. Should the GP2 permittee discontinue a site prematurely and IDNR terminates permit coverage, the City would still be responsible for requiring compliance and inspection of these sites. This would include requiring the GP2 permittee to reinstate permit coverage should such permit coverage be prematurely discontinued.

MARION Engineering Department

PENALTIES

MARION Engineering Department

Violations and Penalties

155.11 INSPECTION, NOTICE TO COMPLY, AND NOTICE OF VIOLATION.

1. The Erosion Control Officer shall inspect the site in response to reports from third parties or at other times, at the Erosion Control Officer's discretion.
2. The Erosion Control Officer shall issue a Notice to Comply to the responsible party or parties, describing any problems and specifying a date and time by which compliance must be achieved.
   a. The Erosion Control Officer may modify a Notice to Comply and may authorize, in writing, an extension to the specified date and time by which compliance must be achieved.
   b. Failure to achieve compliance by the specified date and time is a violation of this section.
3. The Erosion Control Officer shall, upon determination of any violation of this section, issue a Notice of Violation in writing to the responsible party or parties, indicating the nature of the violation and ordering the action necessary to correct it.
   a. The Notice of Violation may:
      i. Order the discontinuance of any illegal work, specifying a date and time for such discontinuance; and
      ii. Require the repair and cleanup of any damage done due to failure to comply with General Permit No. 2, specifying a date and time for completion of repair and cleanup; and
      iii. Order the withholding of any building or occupancy permits for the site, and
      iv. Order the discontinuance of any or all work at the site, including at the Erosion Control Officer's discretion work not directly related to the cause and prevention of erosion and sedimentation, except potential life safety related work and work necessary to achieve compliance and to repair and clean up damage, specifying a date and time for such discontinuance to commence and conditions for such discontinuance to cease.
   b. Failure to comply with any order in a Notice of Violation is an additional violation. Each day of such failure constitutes a separate violation.
   c. The Erosion Control Officer may modify a Notice of Violation and may authorize, in writing, an extension to the specified dates and times therein.
   d. The Notice of Violation shall, where necessary or appropriate, recommend to the City Attorney the institution of legal or equitable actions that may be required for the enforcement of this section.
4. Communication to a responsible party's employee, partner, attorney, agent, contractor, or subcontractor shall be regarded as communication to the responsible party for the purpose of this section.
5. Communication to one responsible party shall be regarded as communication to each responsible party for the purpose of this section.

MARION CODE CHAPTER 155: EROSION AND SEDIMENT CONTROL

MARION Engineering Department

Violations and Penalties

SECTION 155.14 ENFORCEMENT.

1. Violation of any provision of this chapter may be enforced as a municipal infraction within the meaning of Iowa Code 364.22, pursuant to Chapter 4 of this Code of Ordinances.
2. Violation of any provision of this chapter may also be enforced by civil action including an action for injunctive relief.
3. In any civil enforcement action, administrative or judicial, the City shall be entitled to recover its attorneys' fees and costs from a person who is determined by a court of competent jurisdiction to have violated this chapter.

MARION Engineering Department

Violations and Penalties

WHAT THAT MEANS:

- There will be City inspections conducted at the City's discretion.
- If there is a problem, you will get a Notice to Comply, and a deadline to fix the problem.
- If you can't meet the deadline, contact the City. Maybe we can work out another solution.
- If you don't meet the deadline, you're in violation of the Municipal Code, and…
- You will get a Notice of Violation, which can also include…
  - Stop Work Orders
  - Repair and cleanup requirements
  - No further building inspections or approvals; no occupancy certificates
- Failure to comply with any order in a Notice of Violation is an additional violation.
- **Each day of such failure constitutes a separate violation.**

MARION Engineering Department

Violations and Penalties

STOP WORK ORDERS

Marion Code Chapter 156.07 STORM WATER MANAGEMENT REQUIREMENTS

Upon determination that a site is not in compliance with the SWMP* and/or DNR regulations, the City Engineer may issue an order to comply. The order shall describe the problem and specify a date whereby the work must be completed, and indicate the penalties to be assessed for further noncompliance.

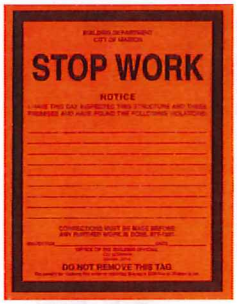
**SWMP = Storm Water Management Plan*

Marion's National Pollutant Discharge Elimination Municipal Separate (NPDES) Storm Sewer System (MS4) permit Part II.D requires that the City have the "Authority to issue an order to terminate activities due to failure to implement or maintain pollution control BMPs, authority for the permittee to enter private property for the purposes of compliance inspections and penalties for non-compliance shall be included."

Failure to comply with a Stop Work Order = Municipal Infraction

MARION Engineering Department

Violations and Penalties



MARION Engineering Department

Violations and Penalties

IOWA CODE 364.22 MUNICIPAL INFRACTIONS.

1. a. A municipal infraction is a civil offense punishable by a civil penalty of not more than **seven hundred fifty dollars for each violation** or if the infraction is a repeat offense, a civil penalty not to exceed **one thousand dollars for each repeat offense**. However…a municipal infraction arising from noncompliance with a pretreatment standard or requirement, referred To in 40 C.F.R. § 403.8, by an industrial user may be punishable by a civil penalty of not more than **one thousand dollars for each day a violation exists or continues**.

MARION Engineering Department

Violations and Penalties

In addition to the regular site visits and inspections conducted by staff of the City of Marion, the Iowa Department of Natural Resources General Permit allows the DNR or EPA to inspect construction projects as well as have access to and copy any records that must be kept under the conditions of the permit. Also, In addition to the fines and penalties imposed by the City of Marion, both the DNR and EPA may issue penalties if your project is found to be in noncompliance with the permit requirements. **Iowa Code authorizes penalties of up to $5,000 per day of violation for the NPDES permit violations. The EPA may also issue a penalty of up to $37,500 per day for each violation.**

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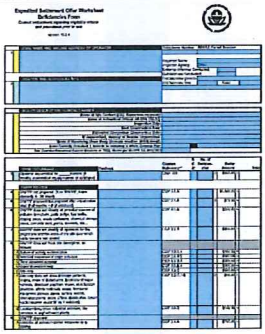

MARION Engineering Department

Again – what this is about

Clean Water Act

MARION Engineering Department

Again – THIS is what it's about.

MARION Engineering Department

Questions?

MARION Engineering Department

SWAC?

- Initially I'll offer this weekly or twice a month – both day and evening.
- Then I'll offer this monthly, alternating day/evening…
  - Adjustments and revisions can be made where necessary
- I want to require this for all developers, contractors, builders, etc…
- I'll keep a database of who has attended
- developers, contractors, builders who refuse to attend will eventually no be allowed to build in Marion…

MARION Engineering Department

APC EMMERT METAL SITE - City of Marion Quarterly SWPPP inspection

Project	2016 Quarter 2
Created	2016-05-06 18:23:14 UTC by Steve Cooper
Updated	2016-05-19 15:12:13 UTC by Steve Cooper
Location	42.0289029507358, -91.5664970689375
Status	Complete
Project Name	APC EMMERT METAL SITE - City of Marion Quarterly SWPPP inspection
IDNR Permit #	27931-27682
Inspection Date	2016-05-06
Inspection Time	13:23
Inspector Name	Steve Cooper, Stormwater Coordinator
Temperature	75
Weather Conditions	Clear
Are all slopes adequately stabilized?	Yes
Are silt fence runs shorter than 200 feet?	Yes
Is silt fence post sapcing acceptable?	Yes
Is silt fence intact and less than 50% full?	Yes
Are sediment basins in good working order and maintained?	Yes
Are concrete washouts in good working order and maintained?	Yes
Are trash, debris, and hazardous materials properly contained?	Yes
Are streets clear of mud, siltation, vehicle tracking, etc.?	Yes
21/14 rule - Are areas not disturbed for 21 days stabilized?	Yes
Is the SWPPP site map current?	Yes
Have contractor inspections been completed every 7 calendar days?	Yes
Where are SWPPP documents located?	A the offices of Abode Construction - 3405 7th Ave Suite 102 in Marion.
Comments and Observations:	The site generally looks good.
Deficiencies Found and Additions Required:	None at this time.
Contractor Notification (Name, Notification Date, and Time of Notification):	Notified via email on 5/19/16: CHAD BRANDEL (cbrandel@abodeconstruction.com), ZACH WITTER (zwitter@abodeconstruction.com)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Inspector's Signature

STEVE COOPER

Signed 2016-05-06 20:12:16 UTC

Photos

A.F.C. Emmerts
Abode

Echo Hill/Bellboy

Project	2016 Annual Inspections
Created	2016-08-11 17:24:52 UTC by Steve Cooper
Updated	2016-09-23 14:48:24 UTC by Steve Cooper
Location	42.079695, -91.592513
Status	Complete
BMP ID	Echo Hill/Bellboy
BMP General Location/Description	Northwest of Echo Hill Road, west of Bellboy Drive
BMP Type	Detention - Both Quantity and Quality
Inspection Date	2016-08-11
Inspection Time	12:24
Inspector	Steve Cooper, Stormwater Coordinator
Public or Private	Public
Current Weather Conditions	Clear
Last Rainfall	>72 hrs
Basin Condition	Dry
Vegetation Height	<1 ft
Action Needed	Low Priority - No Action Needed
Number of and location of Inlets	Inlet from east and inlet from northwest from the storm sewer system.
Inlet conditions and notes	Good
Number of and location of Outlets	One to the southwest.
Outlet conditions and notes	Good
Outlet Sedimentation Condition	Good
Spillways/Flumes Condition	N/A
Rip Rap Condition	Good
Slope Erosion Issues	No Erosion Issues
Does the basin have a significant amount of debris in it?	No
Are tree removal practices required?	No
Basin capacity compromised due to sedimentation?	No
Signature	STEVE COOPER Signed 2016-09-23 14:48:18 UTC

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Edgebrook

Project	2016 Annual Inspections
Created	2016-07-28 15:04:04 UTC by Steve Cooper
Updated	2016-09-16 16:51:01 UTC by Steve Cooper
Location	42.0538806030918, -91.5897155274559
Status	Complete
Outfall ID	Edgebrook
Outfall General Location/Description	West of Indian creek road
Outfall Type	FES
Inspection Date	2016-07-28
Inspection Time	09:58
Inspector	Steve Cooper, Stormwater Coordinator
Overall Sturcture Condition	Good
Illicit Discharge?	No
Other Comments	Minor algae

Signature

Signed 2016-09-16 16:50:59 UTC

Photos

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ICWMA Fiscal Year 2016
Organizational Management Work Plan Review
Table 1 below summarizes the fiscal year 2016 work plan for organizational management services provided by ECICOG. The first two columns outline the expected tasks and outcomes and the third column details the actual results.

Table 1. Organizational Management Work Plan Review for FY 2016

Tasks & Associated Actions		Anticipated Outcomes	Actual Results
a.	ICWMA Board of Directors		
	Quarterly Board meeting	Meeting second Wednesday in Aug, Nov, Feb, and May	ICWMA Board meetings held Aug. 12, 2015; Nov. 4, 2015; Jan. 12, 2016; Apr. 22, 2016
	Establish Sub-Committees - Education & Outreach - Agriculture Related - Monitoring & Analysis - Policy & Ordinance Review - Infrastructure	Recruit participants and organize initial meetings for at least 3 sub-committees to develop their individual work plans	Met with Linn SWCD, NRCS, and IDALS staff to brainstorm about establishing the Ag related subcommittee
	Represent the ICWMA as requested	Give informational presentations and/or continue communication with other WMAs in Iowa	Presentations at Linn Mar FFA class, Iowa APA Conference, Farm Bureau Annual Luncheon, Linn Mar Natural Resources class, Iowa WMA meeting, Iowa Water Conference, Cedar River Coalition meeting
b.	Education & Outreach		
	Organize workshops identified in the ICWM Plan & aligned with the Education & Outreach Sub-Committee work plan	Host at least 4 workshops identified in the ICWM Plan	Marion partnered with ISWEP to host cluster trainings over two all day events related to concrete wash-out, SWPPP, and info for realtors/developers
	Coordinate with Coe College to promote their 3rd Grade curricular materials based on Indian Creek	Promote the use of the materials in schools	The curriculum was completed
	Coordinate with Linn-Mar High School FFA group on their video documentary of ag conservation practices project	Assist with connections for video production and content	Provided information to FFA teacher and presented at Linn Mar Natural Resources class. Three students qualified for the State Enviro-thon Contest
	Organize events that connect people to the creeks such as clean-ups or storm drain labelling as identified in the ICWM Plan	Organize at least one event identified in the ICWM Plan. Examples include One Day in May, Art on the Drains, and rain barrel workshops	Assisted in promoting events such as Ag Day in the Park, Farm Bureau Field Day, etc.

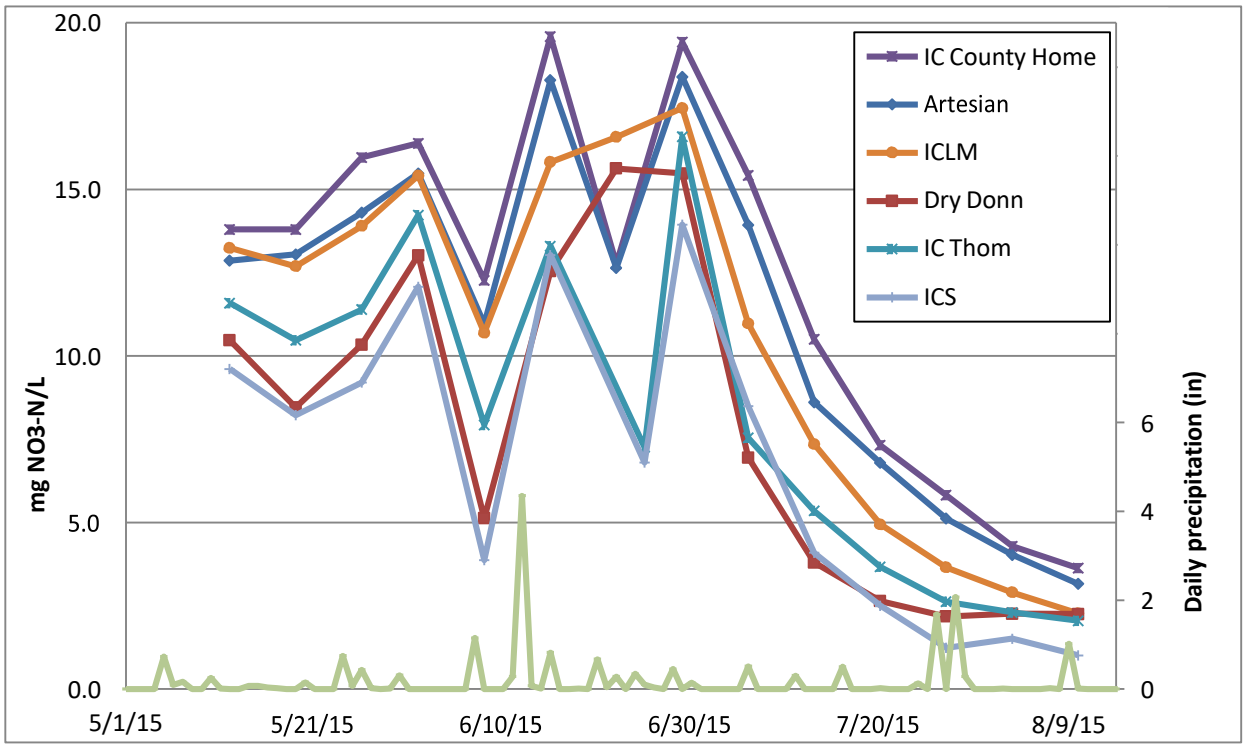
Table 1 Continued

	Tasks & Associated Actions	Anticipated Outcomes	Actual Results
c.	Grant Writing		
	Complete grant applications as opportunities arise	Complete at least two grant applications on behalf of the ICWMA and ICWMA Members	Assisted with 4 grant applications: - EPA Environmental Education for CR - WQI Urban Practices for CR - Iowa Initiative for Sustainable Communities for Linn County - VISTA AmeriCorps for ECICOG
	Provide relevant information for others completing grant applications	Provide information as requested	Responded to information requests from: - Coe College - FFA at Linn Mar - Trees Forever - GeoTREE Center - Prairiewoods - City of Iowa City
d.	Annual Review of the ICWM Plan		
	Coordinate with Monitoring & Analysis Sub-Committee and ICWMA Members to collect and compile watershed assessment	Monitoring plan in place and data collected for the report	Requested monitoring report from Dr. St. Clair at Coe College
	Establish a process to track BMPs and create a summary map for the annual report	BMP tracking method developed and summary map completed	Worked with Linn SWCD office to get a practices map
	Draft the annual State of Indian Creek Watershed report	Report completed and distributed to ICWMA Members and findings communicated to watershed stakeholders and the public	Draft ready for ICWMA Board review

ICWMA Water Quality Monitoring: Coe College Chemistry and Environmental Studies
In a continued partnership between the City of Cedar Rapids and the Coe College Chemistry and Environmental Studies Water Quality Laboratory guided by Dr. Martin St. Clair, sampling occurred at six sites in the Indian Creek watershed from May to August 2015. Excerpts of the "Cedar River Tributary Study: Summer 2015" authored by Dr. St. Clair and four student researchers (Laura Bybee, Maddy Jensen, Ciera Rodriguez, and Christina Brown) are included here. The entire report is posted to the Indian Creek Watershed Management Authority website at www.indiancreekwatershed.weebly.org.

The Indian Creek watershed sampling results from the summer of 2015 are depicted in Figure 3 showing nitrate concentration data from throughout the watershed. The legend shows sites beginning upstream and working downstream toward the Cedar River. (Dry Creek at Donnelly Park is a tributary which joins Indian Creek between Linn Mar and Thomas Park.) Examination of this figure shows that nitrate concentrations consistently decrease moving down the watershed. The average ratio of nitrate concentrations in Indian Creek at County Home Road (IC County Home) to the nitrate concentration in Indian Creek at Mt. Vernon Road (ICS) on a given day is 2.33, with a maximum of 4.69 and a minimum of 1.36. Dilution plays a role in this decrease in nitrate concentration, including the contribution of Dry Creek. (Dry Creek has considerable groundwater inputs near where it empties into Indian Creek, which generally results in lower nitrate concentrations.) However, it is also clear that the suburban area (which includes multiple golf courses) does not make a significant addition to nitrate concentrations. This behavior is consistent with previous years' observations.

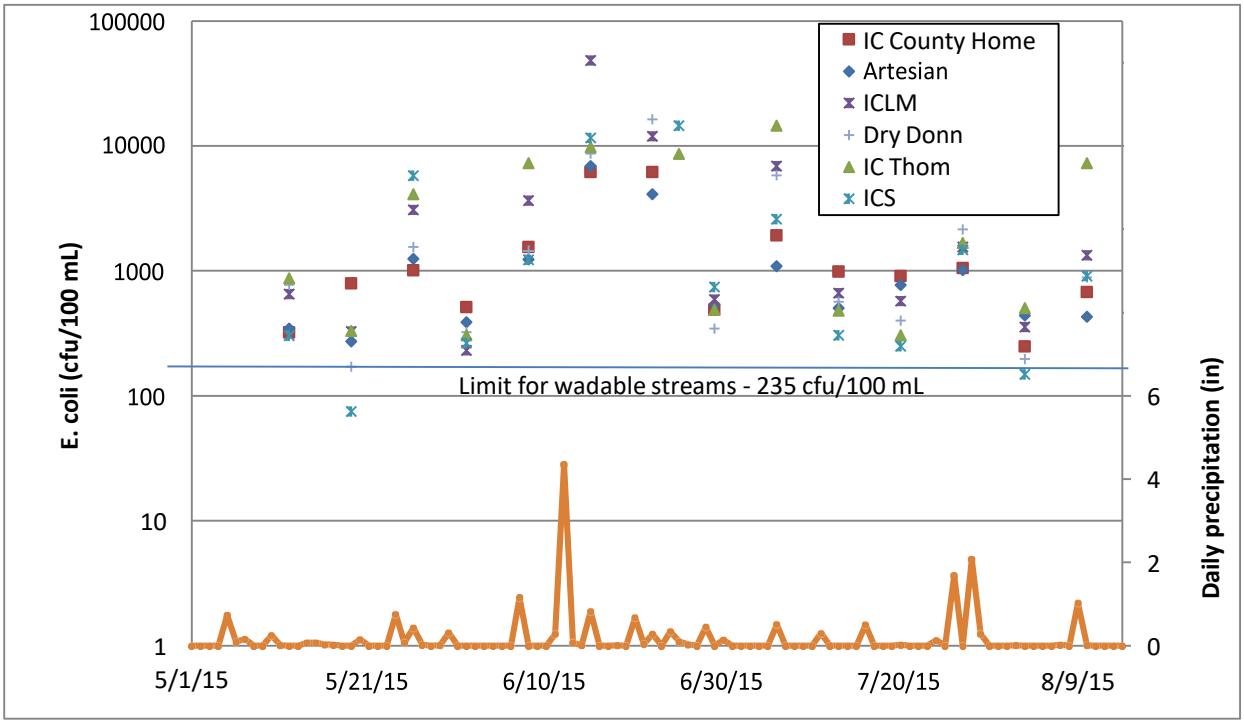
Figure 3. Nitrate-N concentrations in Indian Creek from upstream (IC County Home) to downstream (ICS). (Dry Creek is indicated in italics.) Daily precipitation[9] is also shown.



[9] From the Cedar Rapids Airport.

E. coli concentrations were also of concern during the Indian Creek assessment. Donnelly Park, Willow Park, Thomas Park, Indian Creek Park, Lininger Park, Boyson Park, and the Indian Creek Nature Center all offer opportunities for children to wade in Indian Creek and Dry Creek; thus the children's recreational use (A3) classification is appropriate. The state standard for *E. coli* sample maximum from 3/15 to 11/15 of each year is 235 cfu/100 mL of water.[10] As seen in Figure 3, of 84 measurements made along Indian Creek and Dry Creek in 2015, 79 samples (94%) exceeded the standard. It is challenging to determine the source of these bacteria – common sources can include livestock, wild animals, pets, and poorly functioning septic systems. In addition, there is wide variability depending on precipitation, with recent intense rains resulting in high values. In Table 2, the Indian Creek sites are ranked for each sampling day. This analysis indicates that Indian Creek at County Home Road and at Thomas Park often have the highest values, while Indian Creek at Mount Vernon Road (ICS) typically has the lowest value. Both County Home and Thomas Park could have inputs from livestock (Berry's Run enters Indian Creek above the Thomas Park sampling site and has significant pasture along the waterway), and Thomas Park could certainly have inputs from pets.

Figure 4. *E. coli* concentrations in the Indian Creek watershed. The state standard for A3 waters and daily precipitation[11] are also shown.



[10] See Iowa Administrative Code, Chapter 61, section 61.3(3). Available at https://www.legis.iowa.gov/docs/ACO/chapter/567.61.pdf

[11] From the Cedar Rapids Airport.

Table 4. Ranking of *E. coli* counts for the Indian Creek watershed on each sampling day.

	#1 high	#2	#3	#4	#5	#6 low
IC County Home	4	0	1	1	5	2
Dry Donn	1	1	3	5	2	1
ICS	2	1	1	2	1	6
ICLM	1	5	6	0	0	1
IC Thom	5	3	1	2	2	0
Artesian	0	3	1	3	3	3

Average parameters for other values measured in the Indian Creek watershed are shown in Table 5. Total suspended solids and turbidity increase moving down the watershed, as do chloride concentrations. Both of these observations may reflect the increasing urbanization in the lower part of the watershed, with runoff from impermeable surfaces contributing to both of these parameters.

Table 5. Average measurements for the Indian Creek watershed (median values for *E. coli*)

Site	DO	Temp	pH	Cond	Turb	TSS	DRP	Cl	NO3-N	SO4	*E coli*
IC County Home	8.4	17.4	7.46	473	28.5	28.6	0.16	28.2	12.2	16.6	987
Artesian	7.8	18.0	7.66	479	35.7	32.7	0.15	28.8	11.3	20.0	771
IC Linn Mar	8.2	18.3	7.73	500	29.2	29.0	0.20	28.9	10.6	20.8	1333
Dry Donnelly	9.2	16.7	7.59	519	22.1	18.5	0.21	30.7	7.9	23.9	884
IC Thomas	9.1	18.1	7.75	496	33.2	23.2	0.24	29.5	8.3	22.0	1670
ICS (Mt. Vernon Rd.)	9.3	19.3	7.78	503	45.1	43.0	0.22	32.5	6.8	20.5	908