

**AGENDA
CASCADE CHARTER TOWNSHIP
REGULAR BOARD MEETING**

Wednesday, April 27, 2022

7:00 P.M.

Wisner Center

2870 Jacksmith Drive SE, Grand Rapids 49546

Public may access the meeting via video conference software Zoom

<https://us02web.zoom.us/j/82405627597>

Meeting ID: 824 0562 7597

By Phone: 1 312 626 6799

Expected Meeting Procedures

1. During public comments you may speak on any item not noted on the agenda for a public hearing.
2. Please limit comments to 3 minutes per person and the Board may or may not choose to respond.
3. Please limit your comments to a specific issue.
4. Please turn OFF cellular phones.

Article 1. Call to Order, Roll Call

Article 2. Pledge of Allegiance to the Flag

Article 3. Approval of Agenda

Article 4. Presentations

a.

Article 5. Public Comments - Anything on the Agenda not scheduled for a public hearing. (limit comments to 3 minutes)

Article 6. Approval of Consent Agenda

a. Receive and File Minutes

1. Township Board – 4/13/2022

b. Receive and File Reports

1. Sabo PR First Quarter 2022 Report

c. Receive and File Education Requests

1. Oxana Sourine – 2022 MMTA Advanced Institute – Midland, MI– May 15-18, 2022

2. Jennifer Genter – IAAO Annual Conference-Boston, MA – August 28-31, 2022

3. Holly Benedict – IAAO Annual Conference-Boston, MA – August 28-31, 2022

d. Receive and File Communication

1. Liquor License Compliance Review – M&M Golf Properties, LLC

Article 7. Financial Actions

a.

Article 8. Unfinished Business

**027-2022 Consider Pathway Project and Crossing on Cascade Road
between Kenrob and 36th Street**

Article 9. New Business

028-2022 Consider Approval of the Township Stormwater Ordinance

**029-2022 Consider Modification to the PFAS Interim Water Solutions
Project**

Article 10. Discussion

1. Egypt Creek Landscaping Zoning Problem Update
2. Worm Farm Zoning Problem Update

**Article 11. Public Comments – Any comments...whether it is on the agenda or not.
(limit comments to 3 minutes)**

Article 12. Closed Session

*Pursuant to Open Meetings Act 15.268 (d) – To consider the purchase or lease
of real property up to the time an option to purchase or lease that real property is
obtained.*

Article 13. Manager Comments

Article 14. Board Member Comments

Article 15. Adjournment

**MINUTES OF THE
CASCADE CHARTER TOWNSHIP
REGULAR BOARD MEETING**

Wednesday, April 13, 2022

Wisner Center

2870 Jacksmith Dr SE

Grand Rapids, MI 49546

AND

Virtual Zoom Meeting

7:00 P.M.

HYBRID FORMAT

- Article 1.** Supervisor Lesperance called the meeting to order.
Present: Supervisor Lesperance, Clerk Slater, Treasurer Peirce, Trustees Koessel, McDonald, Shipley and Noordhoek
Absent: None
Also Present: Township Manager Swayze, Chief Magers, Scott Hogan-Foster Swift, Vanessa Walstra-KDL, Warren Creamer-Municipal Financial Consultants Inc (MFCI) via Zoom, Deputy Clerk Brott, and those listed in the Supplement
- Article 2.** Supervisor Lesperance led the Pledge of Allegiance.
- Article 3.** **Approval of Agenda**
Motion by Trustee Shipley, seconded by Clerk Slater to approve the agenda with the revision of Article 9, 023-2022 regarding the reinstatement of the Pathway Ad Hoc Committee being moved to Article 10, Discussion, as it doesn't require Board action. Motion carried unanimously.
- Article 4.** **Presentations**
- a. Fire Department Promotion Ceremony
Chief Adam Magers and Cascade Charter Township Firefighters celebrated a retirement and promotions.
 - b. Cascade Library Refresh Project
Vanessa Walstra-KDL, Melissa Malburg-Progressive AE, and Ken Brandsen-Progressive AE presented a plan to update the Cascade Library and its grounds.
- Article 5.** **Public Comments-Anything on the Agenda not scheduled for a public hearing. (limit comments to 3 minutes)**
1. Tom Richardson-3438 N. Applecrest Ct-Re Pathways: From a survey of residents taken by the Pathway Committee before it was dissolved, the two dominant values were safety and fitness. Presented heat maps from the fitness app Strata.
 2. Wendy Sturm-2570 Hunter Green Ct-Is in support of the library remodel and outdoor space. It is used a lot for the community. There would be a good amount of volunteer support.
- Article 6.** **Approval of Consent Agenda**
- a. Receive and File Minutes
 1. Township Board – 3/23/2022

Township Board Minutes

April 13, 2022

- b. Receive and File Reports
 - 1. Treasurer’s Department Report – February 2022
 - 2. Building Department – March 2022 Report Summary
- c. Receive and File Education Requests
 - 1. Bill Benoit – COCM 2022 Spring Conference – Bay City, MI – May 16-18, 2022
 - 2. Ron Sabin – COCM 2022 Spring Conference – Bay City, MI – May 16-18, 2022
 - 3. Aaron Newton – MMTA 2022 Basic Institute – Mt. Pleasant, MI – April 24-29, 2022
- d. Receive and File Communication
 - 1.

Motion by Trustee Shipley, seconded by Trustee Koessel to approve the Consent Agenda. Motion carried unanimously.

Article 7. Financial Actions

- a. Consider Approval of February 2022 Financial Reports
 - b. Consider Approval of February 2022 Payroll, Payables and Transfers
 - c. Consider Approval of March 2022 Payroll, Payables and Transfers
- Motion by Trustee Koessel, seconded by Trustee Shipley to approve. Motion carried unanimously.

Article 8. Unfinished Business
None

Article 9. New Business

022-2022 Consider an Appointment to the Planning Commission
Supervisor Lesperance appointed Joe Engel to fill the vacancy on the Planning Commission.
Motion by Trustee Koessel, seconded by Trustee Shipley to approve. Motion carried unanimously.

023-2022 Consider Reinstatement of the Pathway Ad Hoc Committee
(Moved to Discussion Section/Art. 10 per Board vote in Approval of Agenda/Art. 3.)

024-2022 Consider a Kent County Road Commission Work Order for Pre-Engineering Services for Snow Ave. Road Paving
Considerable discussion.
Motion by Trustee Koessel, seconded by Trustee Shipley to approve. Motion carried unanimously.

025-2022 Consider Agreements for Bond Counsel and Financial Advisory Services for Fire Station #1 Bonding
Warren Creamer-MFCI answered questions via Zoom.
Motion by Trustee Shipley, seconded by Trustee Koessel to approve. Motion carried unanimously.

026-2022 Consider Additional Funding for Kent County Sheriff Department Additional Services
Considerable discussion.

Motion by Trustee Shipley, seconded by Trustee McDonald to approve. Motion carried unanimously.

027-2022 Consider Pathway Project and Crossing on Cascade Road between Kenrob Dr. and Pine Park Dr.

Considerable Discussion.

Motion by Treasurer Peirce, seconded by Trustee Shipley to table the item. Motion carried unanimously.

Article 10. Discussion

1. Reinstatement of the Pathway Ad Hoc Committee (Moved to Discussion Section/Article 10 per Board vote in Approval of Agenda/Article 3)
After considerable discussion, the Board decided it is needed.

Article 11. Public Comments – Any comments...whether it is on the Agenda or not. (limit comments to 3 minutes)

1. Brian Holcomb-3415 Glenstone Ct-Re Dumping at Egypt Creek Landscaping, formerly Centennial Golf Course: Not a good neighbor (loud music and bright lights at very late hours), dumping causing the flood plain to erode, disregard for other residents and wildlife, not being used for the intended purpose. Hopefully the Township can do something.
2. Joe Gindzin-3420 Glenstone Ct-Re Dumping at Egypt Creek Landscaping: Received a threatening letter in 2021 from Egypt Creek Landscaping claiming adverse possession. The company is clearcutting trees and they are terrible neighbors.
3. Robert Kramer-3590 Meadowood Trails-Resides on the opposite side of Egypt Creek Landscaping, and all the lights shine into his house. Concrete blocks have been shoved into the river, and Turtle Creek is now stopped up because of their dumping. The non-conforming use PUD was for the golf course and should be revoked. As a resident, he has to follow a set of rules, but it seems not this business owner.
4. Anne England-3415 Glenstone Ct-Re Dumping at Egypt Creek Landscaping: Presented pictures to the Board of her property before Egypt Creek Landscaping bought the land, and after they purchased and started dumping in the Creek. It is devaluing homes, and the elevation has changed in the neighborhood. Wants to have their non-conforming use PUD revoked.
5. Richard Marshall-7465 Sheffield-Re Dumping at Egypt Creek Landscaping: Does not live in the neighborhood but drives by it and it looks disgusting. Re Additional Funding for Kent County Sheriff's Office: How will they be held accountable? Manager Swayze advised the Township receives a quarterly report which is made available on the website. Can a volunteer group help with code enforcement?
6. Scott Rissi-7238 Cascade Rd-Re Additional Funding for Kent County Sheriff's Department: Can some of the extra policing hours occur at night? Re Pathways: Extending the pathway from 36th St to Pine Park would be safer than a median and is only 1,200 feet more.
7. Piotr Szczepanski-1460 Hillsboro Ave-Thank you for starting the Pathways Committee again.
8. Tom Richardson-Re Pathways: Continued his comments and presentation of the heat map from the Strata app.

9. Jeff Hughes-7250 Redbud Ln-Re deer in Burton Park: Some people are feeding the deer, which is a misdemeanor. The deer overpopulation must be addressed. Re Library Presentation: Perennials will be destroyed by the deer.

Article 12. Manager Comments

1. Two more focus groups will be held: 4/14-Growth Management & Preservation, and 4/21-Road Safety & Streetscapes, both 6:00-7:30 pm at the Wisner Center and via Zoom.

Article 13. Board Member Comments

1. Trustee Shipley-Thanked all in attendance, both in person and virtually.
2. Treasurer Peirce-The Board should receive the Forensic Audit Report in advance of presentation.

Article 14. Adjournment

Motion by Trustee Shipley, seconded by Treasurer Peirce to adjourn. Motion carried unanimously.

Meeting adjourned at 10:02 pm.

Krissi Brott
Deputy Clerk

Approved by:

Grace Lesperance, Supervisor

Susan B. Slater, Clerk

TO: Supervisor Lesperance; Clerk Slater; Treasurer Peirce; Trustees Koessel, McDonald, Shipley and Noordhoek; Manager Swayze

FROM: Hunter Zuk

CC: Mary Ann Sabo, Amy Snow-Buckner

DATE: April 21, 2022

SUBJECT: Q1 2022 Cascade Township Communications Update

During the first quarter of 2022, Communications partnered with Township departments to inform residents and promote Cascade Township in a variety of ways.

Media Relations

Although we didn't have any direct media outreach this quarter, we do have several media outreach opportunities planned for the Fire Station 1 project and Memorial Day ceremony. As always, we will continue to keep an eye out for other media outreach opportunities.

Notable Projects

Fire Station 1 – As the May 11 meeting nears, below is a snapshot of the Fire Station 1 communications in Q1.

We developed the following tactics:

- **Updated webpage:** We helped create an independent Fire Station 1 page that acts as a resource center for the project. In working with Township and fire officials, this page has been updated regularly and contains upcoming meeting dates, video links, project timelines, past presentations, FAQs and contact info. A link to the page has accompanied every communication we've sent out on this project.
- **Videos:** Since the Jan. 26 Board meeting, we have produced two videos highlighting the Fire Station 1 project. Both videos are available on the Township's website, Facebook page and YouTube channel. They have also been shared via the Township's monthly e-newsletter.
 - [Fire Station 1 update](#): In this video, Fire Chief Adam Magers and Supervisor Grace Lesperance provide an update on the Fire Station 1 project and next steps. This video received great engagement on Facebook: 29 positive reactions and 870 views.
 - [Fire Station 1 walkthrough](#): In this video, Fire Chief Adam Magers and his team give a virtual walkthrough of Fire Station 1 and demonstrate some of the shortcomings and areas for proposed improvement. This video also received great engagement on Facebook: 27 positive reactions and nearly 1,100 views.
- **Postcard:** We designed and coordinated the mailing of a postcard to all Township residents inviting residents to the March 28 open house and May 11 listening session. Also included on the postcard is a QR code residents can scan to visit the Fire Station 1 page and learn more about the events and project. Copies of the postcard are also available at Township Hall.
- **E-Newsletters:** We have included information about the Fire Station 1 project in four e-newsletter campaigns in Q1:

- February e-newsletter
- March e-newsletter
- Two special Fire Station 1 e-newsletters
- **Print newsletter:** The spring print newsletter featured information on the Fire Station 1 project in the supervisor's section and an advertisement on the opposite page. Both of these sections were visible when residents first opened the newsletter.
- **Organic social media:** Since the development of the new Fire Station 1 page, we have shared videos, FAQs and event info on the Township's Facebook page. Additionally, the Fire Department has shared the content on its Facebook page.
- **Paid social media:** In addition to our organic Facebook posts, we boosted the March 28 open house Facebook event to reach residents who don't follow the Township's page. We plan to take the same approach for the May 11 listening session.
- **Media relations:** We plan to distribute press releases before and after the May 11 meeting. After dissemination, we will have the press release placed on the website and share any coverage we receive on Facebook.

Strategic Plan – In Q1, we continued to partner with McKenna and the Strategic Planning Committee as they worked to engage residents through the four focus group sessions. Specifically, we:

- Developed a communications calendar
- Coordinated the printing and mailing of the postcard
- Wrote and designed social media content and paid advertisements
- Wrote and designed print and e-newsletter content

After the final focus group session, we will help communicate the next steps of the strategic plan.

Business Spotlight Videos – Before the pandemic, Cascade Township highlighted a local business each week on its website and Facebook page as part of a spotlight series. The series included photos of the spotlighted business and information from the owner, as well as a link to the business' website and social media pages.

This year, the Township wants to revamp the spotlights into a video series to further promote businesses and put names and faces to them. To kick off this process, we researched business spotlight videos in other communities to gauge what we wanted to feature – and avoid. After conducting research, we put together a memo with our recommendations on direction, length and messaging.

Since Feb. 10, we have recorded eight business spotlight videos. For each video, Economic Development Director Korhorn and I conducted an interview with the owner and captured b-roll that shows off their products and services. During the editing process, we added Cascade-branded graphics and animations.

To ensure consistency, we wanted to build a library so we could launch the series without any gaps. We plan to start sharing the videos at the beginning of May through the Township's website, Facebook page and monthly e-newsletter.

Annual Reports – January kicked off annual report season, and we had our fair share to work on for the Township. During Q1, we helped design annual reports for the Building Department, Planning Department and Fire Department.

The Fire Department annual report was an especially fun one to design. This year, the department kicked off its 80th anniversary and wanted to give the annual report a vintage feel. Throughout the 48-page report, we weaved in historic photos and icons while incorporating elements of the department's brand. The annual report has been very well-received by the department – and beyond. In fact, a fire educational

course in Eastern Michigan University is performing a case study on the annual report to inform other departments how they can effectively promote themselves.

Local Business Guide – In 2019, the DDA developed a guide that features descriptions, photos and contact information for businesses in the Township. These guides are available in hotels and other high-traffic locations often visited by folks who live outside the Township.

We have been tasked with updating the business guide with dozens of new businesses, contact info and photos. We are currently wrapping up the design and look forward to printing it soon.

Ongoing Projects

- Social media content
- Monthly e-newsletters
- Quarterly print newsletters
- Board, committee and commission meeting recordings for website, social media and public access television
- Board meeting recap videos
- Township photography and videography

Projects We Look Forward to in Q2

- Fourth of July and Memorial Day communications
- Ongoing business spotlight videos
- Ongoing Fire Station 1 communications

		Q1 2022 E-Newsletter Analytics			
Monthly Township E-Newsletter				Strategic Planning Focus Group Sessions E-Newsletter (Separate Audience)	
January E-Newsletter				Strategic Planning Focus Group Sessions Introduction	
Total Opens	877			Total Opens	1,358
Total Clicks	114 (13%)	Industry Avg. 6.6%		Total Clicks	115 (8.5%)
Open Rate	65%	Industry Avg. 38.8%		Open Rate	73%
February E-Newsletter				March Strategic Planning Focus Group Sessions	
Total Opens	1,297			Total Opens	1,012
Total Clicks	125 (9.6%)	Industry Avg. 6.6%		Total Clicks	79 (7.8%)
Open Rate	71.4%	Industry Avg. 38.8%		Open Rate	63.9%
March E-Newsletter				April Strategic Planning Focus Group Sessions	
Total Opens	1,245			Total Opens	883
Total Clicks	126 (10.1%)	Industry Avg. 6.6%		Total Clicks	6.3%
Open Rate	71%	Industry Avg. 38.8%		Open Rate	67.5%
Fire Station 1 Special E-Newsletter (1)				Total Subscribers	
Total Opens	984				846
Total Clicks	49 (5%)	Industry Avg. 6.6%			
Open Rate	70.3%	Industry Avg. 38.8%			
Fire Station 1 Special E-Newsletter (2)					
Total Opens	751				
Total Clicks	21 (2.8%)	Industry Avg. 6.6%			
Open Rate	64.6%	Industry Avg. 38.8%			
PFAS Meeting Special E-Newsletter					
Total Opens	1,049				
Total Clicks	70 (6.7%)	Industry Avg. 6.6%			
Open Rate	67.30%	Industry Avg. 38.8%			
Total Subscribers	722	10.7% increase from Q4 2021			



Q1 2022 Social Media Analytics

Facebook					
Total Impressions	79,722				
Link Clicks	3,844				
Likes and Reactions	728				
Total Page Followers	4,820				
Instagram					
Total Impressions	1,856				
Likes and Reactions	136				
Total Page Followers	532				
Twitter					
Total Impressions	2,901				
Likes and Reactions	28				
Total Page Followers	136				



**Cascade Charter Township
Seminar/Conference Attendance Request Form**

This form must be filled out if the employee is requesting Township payment or reimbursement for the employee's attendance to a seminar or conference.

Conditions:

1. Cascade Charter Township will reimburse employees for approved registration for work related seminars and conferences. Individual seminars and conferences must be related to the employee's current job duties or a foreseeable-future position in the organization in order to be eligible for educational assistance.
2. Some seminars/conferences that an employee may attend may be unrelated to their particular job or government in general, and are therefore not covered by this assistance policy.
3. Any request that requires an overnight stay or expenditure over \$1,000 requires Township Board approval before the seminar/conference is attended.
4. Under extenuating circumstances, the Township Manager may approve an overnight stay or expenditure over \$1,000 for a conference or seminar prior to Township Board approval. The request must be made before attendance to a seminar/conference. The Township Board will be informed of request at their next scheduled meeting.

This form must be completed by the employee and approved by the Township Manager and/or Township Board before the seminar/conference is attended.

Name: Oxana Sourine Application Date: 4/05/2022

Conference/Seminar Date: May 15-18, 2022

Location of Seminar/Conference: Midland, MI

Name of Proposed Seminar/Conference: 2022 MMTA Advanced Institute

Description of Seminar/Conference: (may also be attached) See attached

(over)

How will the Seminar/Conference benefit the employee and the township? _____

___ I need educational credits in order to keep my MICPT credentials _____

Cost of the Seminar/Conference: (Registration) \$ _325.00_____

Lodging \$ _430_____ Travel \$ _150_____

Account #: _101-253-724-000_____

Your Signature: Dourine

Approvals:

Department Head: Keri Peirce Date: 4/6/22

Township Manager: Bo Sney Date: 4/22/22

Clerk's Signature: S. Staley Date: 4/7/22

(Showing Township Board approval)

Original to personnel file

1 copy to applicant

1 copy to Accounting

2022 ADVANCED INSTITUTE

May 15 - 18 • The H Hotel • Midland

The Road to Success

Advanced Institute is designed for seasoned treasury professionals

- 1) Learn advanced aspects of issues that apply to you.
- 2) Strengthen relationships and meet new colleagues.
- 3) Maintain professional credentials by earning credits for MicPT and CPAA recertifications.

Remember that to attend Advanced Institute, you must have attended and completed all three years of Basic Institute.

Attendance

Attendees are responsible for keeping track of their own attendance using a point tally sheet that shows sessions and points. Training is all day Monday and Tuesday and a half day on Wednesday.

Lodging

Advanced Institute will be at the H Hotel in Midland for 2022. The MMTA group rate is \$135/night plus applicable fees and taxes. Make your reservation directly with the hotel by calling 833-798-4493 or via the online link. Reservations must be made by Sunday, April 24 to receive the discounted rate.

Cost and Registration

Advanced Institute costs \$325; this covers all sessions, materials, and most meals. Register online at www.MMTA-MI.org to pay with a credit card or by check, attendees must be MMTA members and Basic Institute graduates. Registrations received after April 30 will be subject to a \$50 late fee. Cancellations must be received in writing by April 30 for a full refund; requests by May 5 are eligible for a 50% refund. All refunds are subject to board review and a \$25 cancellation fee.

"The trainings provide a wealth of information as well as the knowledge from the administration and other MMTA members."

"The Advanced Institute topics were interesting, relevant and well planned - the Institute was very well run!"



REGISTER AT
www.MMTA-MI.org

Training Sessions

Single Audit

How to Define & Share Treasury's Contribution

Workplace Wellness

Effective Communication

How to Run an Effective Meeting

Economic Development Toolkit: Special Captures

Tips & Tricks to Run an Effective Office - Breakout Sessions

Treasurer-to-Treasurer Panel Discussion

Legislative Update

Investing Case Studies & Your Investment Policy

Banking Solutions for Avoiding Fraud

Sessions Subject to Change

"Topics are always interesting and informative.

I appreciate having the opportunity to gain more knowledge to help me do better in my job. Thank you!"

"I enjoyed all sessions of Advanced Institutel Great job!"

"Thanks for an awesome line-up of presenters.

I'm never disappointed."





Cascade Charter Township Seminar/Conference Attendance Request Form

This form must be filled out if the employee is requesting Township payment or reimbursement for the employee's attendance to a seminar or conference.

Conditions:

1. Cascade Charter Township will reimburse employees for approved registration for work related seminars and conferences. Individual seminars and conferences must be related to the employee's current job duties or a foreseeable-future position in the organization in order to be eligible for
2. Some seminars/conferences that an employee may attend may be unrelated to their particular job or government in general, and are therefore not covered by this assistance policy.
3. Any request that requires an overnight stay or expenditure over \$1,000 requires Township Board approval before the seminar/conference is attended.
4. Under extenuating circumstances, the Township Manager may approve an overnight stay or expenditure over \$1,000 for a conference or seminar prior to Township Board approval. The request must be made before attendance to a seminar/conference. The Township Board will be informed of request at their next scheduled meeting.

This form must be completed by the employee and approved by the Township Manager and/or Township Board before the seminar/conference is attended.

Name: Jennifer Genter Application Date: 4/20/2022

Name of Proposed Seminar/Conference: IAAO Conference - Promoting Professionalism in Assessment

Seminar/Conference Date(s): August 28-August 31

Location of Seminar/Conference: Boston, Massachusetts

Description of Seminar/Conference: *(may also be attached)*

The 2022 IAAO Conference and Exhibition theme is *Promoting Professionalism in Assessment Administration*. See attached for a list of the current schedules education sessions. More sessions are being added weekly.

How will the Seminar/Conference benefit the employee and the township?

The International Association of Assessing Officer's conference is a great platform to discover some of the best practices and applications available across the country and around the globe. The educational sessions are top notch. This, along with the networking opportunities, the exhibits with vendors that demonstrate the latest and greatest products and tools available which help our profession provide efficient and best practices make this the best conference for assessment professionals to attend.

Cost of the Seminar/Conference:

Registration \$ 730.00

Lodging \$ 1,000.00

Travel \$ 500 - 600

Account # 101-257-724-000

Applicant: Jennifer Senter
Signature

Approvals:

Department Head: Jennifer Senter
Signature

4/20/22
Date

Township Manager: Ben Senter
Signature

4/22/22
Date

Clerk: _____
(Signature Indicates Township Board Approval)

Date

➤ Original to Personnel File

➤ 1 Copy to Applicant

➤ 1 Copy to Accounting



2022

Promoting Professionalism
in Assessment Administration

IAAO

Annual Conference
& Exhibition

August 28-31
Boston, MA



SCHEDULE AT-A-GLANCE

SATURDAY, AUGUST 27

Golf Outing – Course to be announced	9:00am
Rays vs. Red Sox at Fenway Park	3:10pm

SUNDAY, AUGUST 28

Pre-Conference Workshop: Residential Cost Approach*	8:00am - Noon
Registration Desk Open	10:00am - 6:00pm
Pre-Conference Workshop: Dark Store Theory*	1:00 - 5:00pm
First Time Attendee Orientation	4:00 - 5:00pm
Welcome Reception	5:00 - 7:00pm

MONDAY, AUGUST 29

Registration Desk Open	6:30 - 4:30pm
Coffee and Tea Bar	7:30 - 8:00am
Opening Session and Keynote	8:00 - 10:00am
Break	10:00 - 10:30am
Education Sessions	10:30 - 11:30am
Exhibit Hall Opening	11:30am - 5:00pm
Lunch available in Exhibit Hall	Noon - 1:00pm
Education Sessions	1:00 - 2:30pm
Break	2:30 - 3:00pm
Education Sessions	3:00 - 4:00pm
Exhibit Hall Happy Hour	4:00 - 5:00pm

TUESDAY, AUGUST 30

Registration Desk Open	6:30am - 4:30pm
Exhibit Hall Hours	9:00am - 4:30pm
Awards Breakfast	7:30 - 9:00am
Coffee Break	8:00 - 9:30am
Education Sessions	9:30 - 10:30am
Break	10:30 - 11:00am
Plenary Session	11:00am - 12:30pm
Lunch available in Exhibit Hall	12:30 - 1:30pm
Education Sessions	1:30 - 3:00pm
Break	3:00 - 3:30pm
Education Sessions	3:30 - 4:30pm

WEDNESDAY, AUGUST 31

Breakfast	7:00 - 7:45am
★ Annual Business Meeting - NEW TIME	7:00 - 7:45am
Break	7:45 - 8:00am
Networking Hubs	8:00 - 8:45am
Plenary Session	9:00 - 10:00am
Break	10:00 - 10:30am
Education Sessions	10:30 - 11:30am
Women's Initiative Luncheon*	11:30am - 1:00pm
Education Sessions	1:00 - 2:30pm
Beverage Break	2:30 - 3:00pm
Education Sessions	3:00 - 4:00m
Networking Hubs	3:00 - 4:00m
Closing Banquet	6:00 - 9:00pm

www.iaao.org/conference

*Schedule and times are subject to change. * Optional-registration required*

Conference Sessions



IAAO Conference Sessions

Monday, August 29, 2022

10:30 am - 11:30 am

Going Paperless

How Lake County, Florida, is Using Power BI to Gain Deep Insights into Their Data

Interactive (Sales) Map for the Public

Increasing the Use of Property Tax for Domestic Resource Mobilization in Africa: Potential (And Limitations) of New Technology

Updating Your Cost Schedule: An Examination of RCN

Confidence in Your Career

Demystifying The Jefferson County PVA and Gaining Public Trust through Transparency

1:00 pm - 2:30 pm

That's Not the Way We've Always Done It: Navigating Policy Change

Fundamentals of Modern Industrial Valuation - A Survey of the Empirical Industrial Market

Maximum Efficiency: Mass Appraisal Tools in Fast-Growing Ada County (Boise), Idaho

PFAS — Valuation of Contaminated Properties in West Michigan

The Appraisal Foundation Update

Getting to the Root of your Assessment Data Challenges

Adjustment Wars (Star Wars Themed) Qualitative vs Quantitative — Expert Witness Testimony

Ethics, Assurance, and the Future of Valuation and Assessment Professions

3:00 pm - 4:00 pm

Super-Charging Your Staff and Appraisal Processes with Mobile Technology

Use of 3D Model Analysis in the Property Appraisal of Condos

This Is How We Do It 2.0

Best Practice in Property Tax Assessment - Lessons from Around the World

You're Never Too Small: Income Approach Techniques in Small Jurisdictions

The Effect of Solar Systems on Home Values

Understanding County Governance: A State-by-State Analysis

"It's You We Value": Ways to Provide Five-Star Customer Service to Internal and External Users

Tuesday, August 30, 2022

9:30 am - 10:30 am

How Boulder County Manages Complex Deed Workflows to Improve Productivity

It's Not Personal, It's Just Business: Trends in Personal Property Taxation

Eight Mistakes to Avoid When Building Your Model Development Process

Lessons Learned from Appeal Bias Study

Tax Incentive Hub: Interactive Mapping for Transparency and Accountability

WIN Session

11:00 am - 12:30 pm - Plenary

The Property Tax in Focus: Are Assessments and Property Taxes Equitable?

1:30 pm - 2:30 pm

Policies that Promote Equity: Lincoln Institute Report on Residential Property Tax Relief

History and Workings of the Commercial Grain Elevator Market

Managing Inbound Communication Through To Resolution

Making "Meets" Work: Fundamentals of Effective Meetings

Leveraging Technology to Manage the Value Adjustment Board (VAB) process

Oversight Insight — Evolution of Ratio Study Uses for Oversight Around the World

Ethics

3:30 pm - 4:30 pm

Gini Measurement of the Redistributive Effects of Assessments

Supercharge Your Assessing Analytics with Power BI

Opportunity for Change: Innovating a New Model Review Process for Maricopa County

Value of the Cost Approach Amid Rising Inflation and Supply Chain Delays.

Protecting Your Organization's Data from Physical and Cyber Disasters

Promoting Professionalism Through a Training and Development Roadmap Building Invested Teams and Cultures of Excellence

Wednesday, August 31, 2022

9:00 am - 10:00 am - Plenary

When Desirability and Popularity Outpace Planning

10:30 am - 11:30 am

Land Valuation Using Geographically Weighted Regression (GWR) and the Allocation Method.

Harnessing the Power of a Public-Private Partnership in Malaysia

Internationalising the Certificate of Excellence in Assessment Administration

Create the Office Culture that 'Sells Itself' to New Hires

Mediating Property Tax Disputes: A History and Practical Guide

Preparing for Appeals

Mind the Gap! How to Navigate Intergenerational Communication Gaps in the Workplace

1:00 pm - 2:30 pm

Should IAAO Adopt, Accept, or Promote the IPMS?

Implementing Mass Appraisal in Serbia: Challenges and Creative Real Property Data Collection

GIS 101 for Assessors

Hotel Property Tax Issues-Ownership, Management, Going Concern, and Valuation Methodology

Valuing the Unique Outliers

Evaluating CAMA Software — The Best Fit for You

Diversity Equity and Inclusion, Where Do We Begin

3:00 pm - 4:00 pm

The Property Tax Post Pandemic – Why Its Still a Good Tax

The Korean Mass Calculation Model for Residential Property: Issues, Problems, and Possible

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INTERNATIONAL ASSOCIATION of ASSESSING OFFICERS
88th ANNUAL INTERNATIONAL CONFERENCE ON ASSESSMENT ADMINISTRATION
Aug. 28 - 31, 2022 – Boston, Massachusetts

Download form to complete

REGISTRATION

First Name _____ Middle Initial _____ Last Name _____

Preferred Name for Badge _____

Employer _____ Title _____

Address _____

City _____ State/Province _____ Zip/Postal Code _____ Country _____

Phone _____ Mobile _____ E-mail _____

EMERGENCY CONTACT

Name _____ Phone _____

SPECIAL NEEDS

If you have any special needs, please indicate in the space provided below:

Dietary Please List _____

Physical Please check here if you require special accommodations to participate.

E-mail a description of your needs by Aug. 13 to Rachel Mense at mense@iaao.org. After Aug. 13, we cannot guarantee we can accommodate your request.

REGISTRATION TYPES AND FEES

Please indicate if any of the following apply: First Time Attendee Volunteer* Speaker

*Coupon code required on registration form.

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Attendee assumes all risks and accepts sole responsibility for any injury (including, but not limited to, personal injury, disability, and death), illness, damage, loss, claim, liability, or expense, of any kind, that attendee may experience or incur in connection with attending the 88th Annual International Conference on Assessment Administration, August 28-31, 2022 (the "Conference"). Attendee hereby releases, covenants not to sue, discharges, and holds harmless the International Association of Assessing Officers ("IAAO") and its employees, agents and representatives of and from any such claims, including all liabilities, claims, actions, damages, costs, or expenses of any kind arising out of or relating thereto.

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Conference Registration Coupon Codes (e.g. volunteers) Please provide your IAAO Conference Registration Coupon Code _____				
			TOTAL:	

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Check—Please complete this registration form and mail with check or money order, payable to IAAO in US funds, to the IAAO Lockbox at IAAO, PO Box 29900, Dept. 929, Phoenix, AZ 85038-0900. Sending a check may delay your registration 10-14 business days.

Credit Card—Please register and make payment online at IAAO.org. If there is an issue with online payment, contact IAAO at 816-701-8100.





Cascade Charter Township Seminar/Conference Attendance Request Form

This form must be filled out if the employee is requesting Township payment or reimbursement for the employee's attendance to a seminar or conference.

Conditions:

1. Cascade Charter Township will reimburse employees for approved registration for work related seminars and conferences. Individual seminars and conferences must be related to the employee's current job duties or a foreseeable-future position in the organization in order to be eligible for
2. Some seminars/conferences that an employee may attend may be unrelated to their particular job or government in general, and are therefore not covered by this assistance policy.
3. Any request that requires an overnight stay or expenditure over \$1,000 requires Township Board approval before the seminar/conference is attended.
4. Under extenuating circumstances, the Township Manager may approve an overnight stay or expenditure over \$1,000 for a conference or seminar prior to Township Board approval. The request must be made before attendance to a seminar/conference. The Township Board will be informed of request at their next scheduled meeting.

This form must be completed by the employee and approved by the Township Manager and/or Township Board before the seminar/conference is attended.

Name: Holly Benedict Application Date: 4/20/22

Name of Proposed Seminar/Conference: IAAO Annual Conference & Exhibition

Seminar/Conference Date(s): August 28-August 31, 2022

Location of Seminar/Conference: Boston, MA

Description of Seminar/Conference: *(may also be attached)*

2022 International Association of Assessing Officers Conference & Exhibition: Promoting Professionalism in Assessment Administration, including many educational sessions and panels on related assessment topics, as well as great networking.

How will the Seminar/Conference benefit the employee and the township?

IAAO has a reputation for offering superb education in assessment theories and practices from across the nation, as well as globally. In addition to the fantastic educational opportunities at the conference, there are also exhibitions of products and technologies which help advance the assessing field. Further, the chance to network with respected assessing professionals from a variety of backgrounds and locations affords us all the ability to see the larger picture of the work that we do. This will be an excellent opportunity for me to learn and grow in my role here at the Township.

Cost of the Seminar/Conference:

Registration \$ 730.00

Lodging \$ 1,000.00

Travel \$ 500-600

Account # 101-257-724-000

Applicant: 
Signature

Approvals:

Department Head: 
Signature

4/20/22
Date

Township Manager: 
Signature

4/20/22
Date

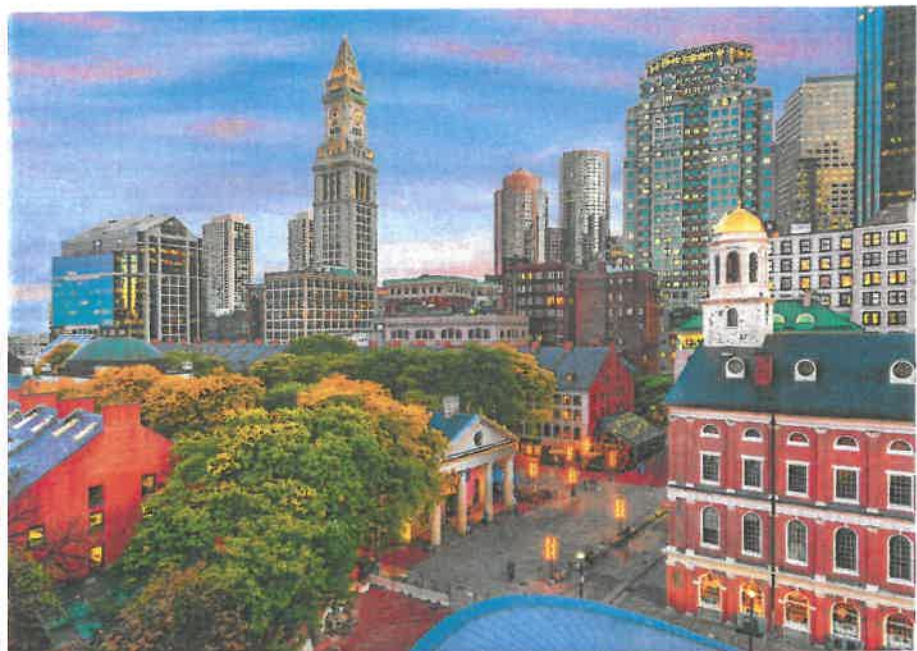
Clerk: _____
(Signature Indicates Township Board Approval)

Date

➤ Original to Personnel File

➤ 1 Copy to Applicant

➤ 1 Copy to Accounting



2022

Promoting Professionalism
in Assessment Administration

IAAO

Annual Conference
& Exhibition

August 28-31
Boston, MA



SCHEDULE AT-A-GLANCE

SATURDAY, AUGUST 27

Golf Outing — Course to be announced	9:00am
Rays vs. Red Sox at Fenway Park	3:10pm

SUNDAY, AUGUST 28

Pre-Conference Workshop: Residential Cost Approach*	8:00am - Noon
Registration Desk Open	10:00am - 6:00pm
Pre-Conference Workshop: Dark Store Theory*	1:00 - 5:00pm
First Time Attendee Orientation	4:00 - 5:00pm
Welcome Reception	5:00 - 7:00pm

MONDAY, AUGUST 29

Registration Desk Open	6:30 - 4:30pm
Coffee and Tea Bar	7:30 - 8:00am
Opening Session and Keynote	8:00 - 10:00am
Break	10:00 - 10:30am
Education Sessions	10:30 - 11:30am
Exhibit Hall Opening	11:30am - 5:00pm
Lunch available in Exhibit Hall	Noon - 1:00pm
Education Sessions	1:00 - 2:30pm
Break	2:30 - 3:00pm
Education Sessions	3:00 - 4:00pm
Exhibit Hall Happy Hour	4:00 - 5:00pm

TUESDAY, AUGUST 30

Registration Desk Open	6:30am - 4:30pm
Exhibit Hall Hours	9:00am - 4:30pm
Awards Breakfast	7:30 - 9:00am
Coffee Break	8:00 - 9:30am
Education Sessions	9:30 - 10:30am
Break	10:30 - 11:00am
Plenary Session	11:00am - 12:30pm
Lunch available in Exhibit Hall	12:30 - 1:30pm
Education Sessions	1:30 - 3:00pm
Break	3:00 - 3:30pm
Education Sessions	3:30 - 4:30pm

WEDNESDAY, AUGUST 31

Breakfast	7:00 - 7:45am
★ Annual Business Meeting - NEW TIME	7:00 - 7:45am
Break	7:45 - 8:00am
Networking Hubs	8:00 - 8:45am
Plenary Session	9:00 - 10:00am
Break	10:00 - 10:30am
Education Sessions	10:30 - 11:30am
Women's Initiative Luncheon*	11:30am - 1:00pm
Education Sessions	1:00 - 2:30pm
Beverage Break	2:30 - 3:00pm
Education Sessions	3:00 - 4:00pm
Networking Hubs	3:00 - 4:00pm
Closing Banquet	6:00 - 9:00pm

www.iaao.org/conference

Schedule and times are subject to change. * Optional-registration required

Conference Sessions



IAAO Conference Sessions

Monday, August 29, 2022

10:30 am - 11:30 am

Going Paperless

How Lake County, Florida, is Using Power BI to Gain Deep Insights into Their Data

Interactive (Sales) Map for the Public

Increasing the Use of Property Tax for Domestic Resource Mobilization in Africa: Potential (And Limitations) of New Technology

Updating Your Cost Schedule: An Examination of RCN

Confidence in Your Career

Demystifying The Jefferson County PVA and Gaining Public Trust through Transparency

1:00 pm - 2:30 pm

That's Not the Way We've Always Done It: Navigating Policy Change

Fundamentals of Modern Industrial Valuation - A Survey of the Empirical Industrial Market

Maximum Efficiency: Mass Appraisal Tools in Fast-Growing Ada County (Boise), Idaho

PFAS — Valuation of Contaminated Properties in West Michigan

The Appraisal Foundation Update

Getting to the Root of your Assessment Data Challenges

Adjustment Wars (Star Wars Themed) Qualitative vs Quantitative — Expert Witness Testimony

Ethics, Assurance, and the Future of Valuation and Assessment Professions

3:00 pm - 4:00 pm

Super-Charging Your Staff and Appraisal Processes with Mobile Technology

Use of 3D Model Analysis in the Property Appraisal of Condos

This Is How We Do It 2.0

Best Practice in Property Tax Assessment - Lessons from Around the World

You're Never Too Small: Income Approach Techniques in Small Jurisdictions

The Effect of Solar Systems on Home Values

Understanding County Governance: A State-by-State Analysis

"It's You We Value": Ways to Provide Five-Star Customer Service to Internal and External Users

Tuesday, August 30, 2022

9:30 am - 10:30 am

How Boulder County Manages Complex Deed Workflows to Improve Productivity

It's Not Personal, It's Just Business: Trends in Personal Property Taxation

Eight Mistakes to Avoid When Building Your Model Development Process

Lessons Learned from Appeal Bias Study

Tax Incentive Hub: Interactive Mapping for Transparency and Accountability

WIN Session

11:00 am - 12:30 pm - Plenary

The Property Tax in Focus: Are Assessments and Property Taxes Equitable?

1:30 pm - 2:30 pm

Policies that Promote Equity: Lincoln Institute Report on Residential Property Tax Relief

History and Workings of the Commercial Grain Elevator Market

Managing Inbound Communication Through To Resolution

Making "Meets" Work: Fundamentals of Effective Meetings
Leveraging Technology to Manage the Value Adjustment Board (VAB) process
Oversight Insight — Evolution of Ratio Study Uses for Oversight Around the World
Ethics

3:30 pm - 4:30 pm

Gini Measurement of the Redistributive Effects of Assessments
Supercharge Your Assessing Analytics with Power BI
Opportunity for Change: Innovating a New Model Review Process for Maricopa County
Value of the Cost Approach Amid Rising Inflation and Supply Chain Delays.
Protecting Your Organization's Data from Physical and Cyber Disasters
Promoting Professionalism Through a Training and Development Roadmap Building Invested Teams and Cultures of Excellence

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88th ANNUAL INTERNATIONAL CONFERENCE ON ASSESSMENT ADMINISTRATION
Aug. 28 - 31, 2022 – Boston, Massachusetts

Download form to complete

REGISTRATION

First Name _____ Middle Initial _____ Last Name _____

Preferred Name for Badge _____

Employer _____ Title _____

Address _____

City _____ State/Province _____ Zip/Postal Code _____ Country _____

Phone _____ Mobile _____ E-mail _____

EMERGENCY CONTACT

Name _____ Phone _____

SPECIAL NEEDS

If you have any special needs, please indicate in the space provided below:

Dietary Please List _____

Physical Please check here if you require special accommodations to participate.

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GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF LICENSING AND REGULATORY AFFAIRS
LANSING

ORLENE HAWKS
DIRECTOR

March 28, 2022

M&M Golf Properties, LLC
Mike Bronkhorst
(mikeb@xgolfholland.com)

**RID # 2202-01550 Reference/Transaction: Conditional license, Transfer Ownership
2021 Class C license issued under MCL 436.1521A(1)(B), downtown development authority, non-
transferable with Sunday Sales Permit (AM & PM) from X-Golf Grand Rapids, LLC.**

Please let this letter serve as notice the Michigan Liquor Control Commission has referred your application to our Enforcement Division for investigation of your request.

Applicant/Licensee: M&M Golf Properties, LLC

Business address and phone number: 5761 28th St SE, Grand Rapids 49546

Home address and phone number of partner(s)/subordinates:

- 1. Michael Bronkhorst Jr: 3791 Bent Ridge Dr, Hamilton 49419 C: (616) 218-3784**
- 2. Mitchell Van Tuinen: 3415 36th St, Hamilton 49419 C: (616) 218-3583**

As part of the licensing process, an investigation is required by the Michigan Liquor Control Commission Enforcement Division. The Enforcement investigation will be conducted from the following designated District Office: **Grand Rapids District Office (616) 447-2647**

You may contact your designated District Office regarding any appointments or questions on documentation requested by the Investigator. **Failure to provide requested information or to keep scheduled appointments will cause the application to be returned to the Lansing office for cancellation.**

Since this request is a transfer under MCL 436.1529(1), approval of the local unit of government is not required. However, a copy of this notice is also being provided to **Local Governmental Unit** should they wish to submit an opinion on the application or advise of any local non-compliance issues.

Under administrative rule R 436.1105, the Commission shall consider the opinions of the local residents, local legislative body, or local law enforcement agency with regard to the proposed business when determining whether an applicant may be issued a license or permit.

Under administrative rule R 436.1003, the licensee shall comply with all state and local building, plumbing, zoning, sanitation, and health laws, rules, and ordinances as determined by the state and local law enforcements officials who have jurisdiction over the licensee. The licensee must obtain all other required state and local licenses, permits, and approvals before using this license for the sale of alcoholic liquor. Approval of this license by the Michigan Liquor Control Commission does not waive any of these requirements.

MICHIGAN LIQUOR CONTROL COMMISSION
Retail Licensing Division
(866) 813-0011

cc: Cascade Twp clerk (sslater@cascadetwp.com)



Cascade Charter Township

Liquor License Transfer Compliance Review

Cascade Township does not issue liquor license transfers but is notified of a potential transfer by the Michigan Liquor Control Commission. The purpose of this form is to report any known non-compliance issues within any township department. Please respond via email to confirm you have or have not found non-compliance issues.

Organization: M&M Golf Properties, LLC

Street Address: 5761 28th St SE, Cascade, MI 49546

TRANSFERRING FROM:

Street Address: X-Golf Grand Rapids, 5761 28th St. SE

Fire Department Approval Email: Yes Date: 3/30/22

Notes: _____

Building Department Approval Email: Yes Date: 3/30/22

Notes: _____

Clerk Department Approval Email: Yes Date: 3/30/22

Notes: _____

Treasurer Department Approval Email: Yes Date: 3/30/22

Notes: _____

Zoning Department Approval Email: Yes Date: 4/1/22

Notes: _____

Township Manager Approval Email: Yes Date: 3/30/22

Notes: _____



CASCADE CHARTER TOWNSHIP

5920 Tahoe Dr. SE, Grand Rapids, Michigan 49546

Date: April 27, 2022
To: Supervisor Lesperance and Cascade Township Board
From: Benjamin Swayze, Township Manager
Subject: Cascade Road Pathway Project and Crossing on Cascade Road Between Kenrob and 36th Street

*****THIS ITEM MUST BE REMOVED FROM THE TABLE BEFORE BEING CONSIDERED*****

FACTS:

The Kent County Road Commission has a scheduled 2022 project to add a 3rd/middle lane to Cascade Road between 36th Street and Whitneyville Ave. During the public hearing for this project, several residents on Kenrob Dr. expressed concern regarding their ability to safely cross Cascade Road to get to the pathway on the opposite side of the road.

In response to the concern, the KCRC originally offered to partner with the Township on a pathway crossing project near Kenrob Dr. The project would have involved a pathway on the northwest side of Cascade Road and a crossing of Cascade Road to the existing pathway on the southeast side of Cascade Road. The crossing would have featured a median island to assist with safe crossing across Cascade Road.

At the April 13 Township Board meeting, the Board tabled consideration of this item, and asked staff to explore the option of a full pathway project that would extend from Kenrob north to the 36th Street interchange where there is a protected signalized crossing for pedestrians. Supervisor Lesperance and I had a chance to meet with the Road Commission and they indicated that they would be amenable to including a full pathway between Kenrob and 36th Street as part of the project. They anticipate the pathway would be 10 feet and would be able to maintain 10-foot distance from the road, though it may need to slightly narrow in some areas.

The partnership would involve KCRC managing the project, including engineering, bidding and project management. The Township would be responsible for the cost of the new pathway. The Kent County Road Commission staff has indicated that the Township financial contribution to the project would be between \$80,000 and \$100,000.

Attached for your review are:

- Draft schematic of proposed additional pathway along Cascade Road

ANALYSIS & CONCLUSIONS:

While the Cascade Road improvements will not actually widen the road at the Cascade Road/Kenrob intersection, the proposed pathway extension will provide the Kenrob and Pine Park residents a safe connection to the pathway system. By connecting to the pathway system at the Cascade Road/36th Street intersection will provide them connections to continue on the pathway north along Cascade Road or east along 36th Street. The partnership with the Kent

County Road Commission will save the Township considerable money on the project, including engineering and project management.

FINANCIAL CONSIDERATIONS:

The initial estimate from the Kent County Road Commission for the Township portion of the project is \$80,000 - \$100,000 though a formal estimate won't be available until more engineering is completed. It would be recommended that the Township consider a \$125,000 threshold for the project to account for the hostile bidding environment. If approved by the Township Board, a 1st quarter budget amendment for the project amount would be prepared for the Board. The 2022 Pathway Fund budget has a net revenue of approximately \$313,000.

RECOMMENDED ACTION:

To consider Cascade Road pathway project and crossing on Cascade Road between Kenrob and 36th Street



CASCADE CHARTER TOWNSHIP

5920 Tahoe Dr. SE Grand Rapids, Michigan 49546

Date: April 27, 2022
To: Supervisor Lesperance and Township Board Members
From: Ben Swayze, Township Manager
Subject: Stormwater Ordinance – Approval

FACTS:

Cascade Township owns and operates a small municipal separate storm sewer system (MS4) that serves Township owned facilities and parks. An MS4 is a conveyance or system of conveyances that is:

- Owned by a state, city, township, village or other public entity that discharges to waters of the US
- Designed or used to collect or convey stormwater (e.g. storm drains, ditches, pipes)
- Not a combined sewer
- Not part of a sewage treatment plant or publicly owned treatment works

To prevent harmful pollutants from being washed or dumped into MS4's, certain municipalities, such as Cascade Township, are required to obtain National Pollutant Discharge Elimination System (NPDES) permits and develop stormwater management plans (SWMPs) The SWMP describes the stormwater control practices that will be implemented consistent with permit requirements to minimize the discharge of pollutants from the sewer system.

Cascade Township partners with LGROW (Lower Grand River Organization of Watersheds) in order to administer the Township MS4 NPDES permit along with 23 other Kent and Ottawa County organizations. Each community in the group had the opportunity to use the model ordinance and manual with some modifications to suit their specific goals, provided minimum State requirements are met. The proposed ordinance and manual were reviewed and tentatively approved by the Township Board in 2016 and subsequently submitted to the State for review and approval. We have been waiting since then for the State to approve the MS4 permit. That permit was recently approved June 30, 2021. Part of the conditions of the Township MS4 permit is approval of the new stormwater ordinance. The Township introduced this ordinance in late 2021 and held the first reading and public hearing in January 2022.

Attached for your review is:

- Stormwater 101 Presentation
- Approved Cascade Township MS4 NPDES Permit
- Memo from Township Engineer on proposed changes
- Current Cascade Stormwater Ordinance
- Proposed Cascade Stormwater Ordinance

ANALYSIS & CONCLUSIONS:

The memo from the Township Engineer should be read in detail to understand what the approval of the new Stormwater Ordinance would entail. The ordinance has been reviewed by Township legal council and edited for clarity and form, but no changes have been made on the substance of the ordinance with the exception of:

- Financial Guarantee for a Stormwater Permit set at \$10,000 unless more is required by the Township
- Violation fine set at \$500 per offences plus costs, damages, expenses and sanctions

The Township Board held the public hearing for this ordinance at a Township Board meeting in January and received minimal public comment. If the Township wished to finalize adoption of the ordinance and may do so now, or at any point in the future. Once approved by the Township Board, the ordinance will become effective upon (summary) publication in a newspaper of general circulation.

FINANCIAL CONSIDERATIONS:

The adoption of the new Stormwater Ordinance itself comes with minimal costs, including staff time, printing and publishing. The new requirements of the ordinance may increase costs to the Township in regards to regulatory activities and costs for future development projects, however it is difficult at this time to quantify those additional costs.

RECOMMENDED ACTION:

Consider approval of the Township Stormwater Ordinance

Stormwater 101 for Elected Officials

Wendy Ogilvie
GRAND VALLEY METRO COUNCIL



What goes down here...

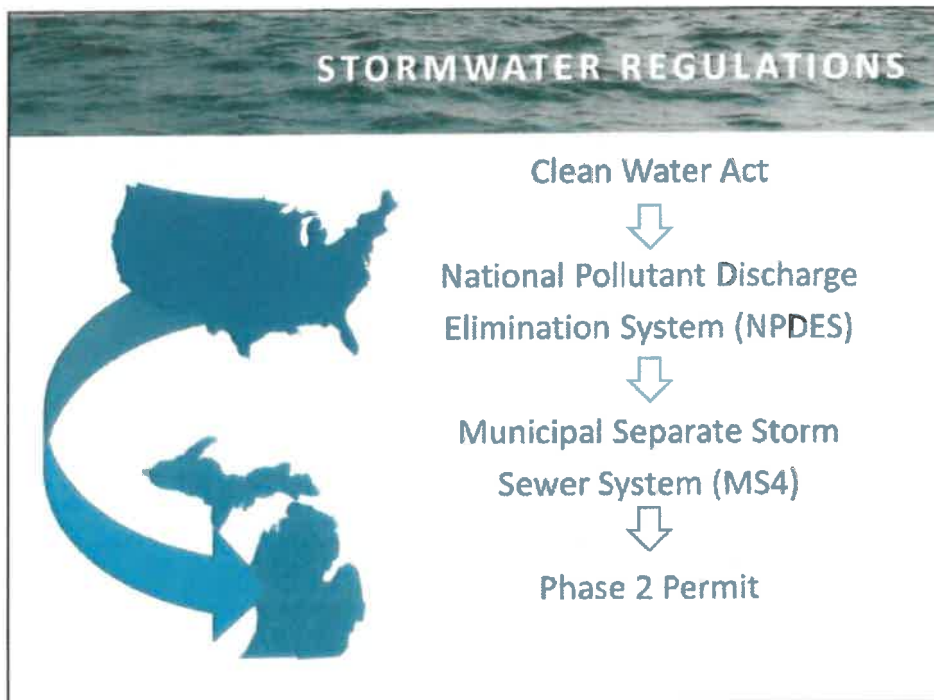
*Dump no waste!
Storm drains lead directly to
rivers, lakes, and streams*

**LOWER GRAND RIVER
ORGANIZATION OF WATERSEKERS**

www.LGROW.org/stormwater



...ends up here

The diagram illustrates the path of stormwater runoff. On the left, a blue stream of water flows from a grey storm drain grate into a blue stream. This stream flows through a green landscape with several tall evergreen trees. The stream eventually flows into a larger body of water, represented by a blue lake or reservoir. The text "What goes down here..." is written in a large, black, cursive font on the left. The text "...ends up here" is written in a large, black, cursive font on the right. The text "Dump no waste! Storm drains lead directly to rivers, lakes, and streams" is written in a smaller, black, cursive font in the center. The logo for the Lower Grand River Organization of Watersekers is located at the bottom center, and the website address www.LGROW.org/stormwater is written below it.





UPCOMING PERMIT REQUIREMENTS

WATER QUALITY


- Total Suspended Solids (TSS)
- Treat the first inch of rain (first flush)
- Reduce TSS 80% or below 80 mg/L

CHANNEL PROTECTION


- Large volumes of stormwater over extended periods can lead to channel erosion
- Retain new or additional runoff onsite from the 2-year, 24 hour event
- Infiltrate ALL of that water into the ground

Upon permit issuance, a new stormwater ordinance is required to be adopted. A draft ordinance has already been created for your community.

USING GREEN INFRASTRUCTURE






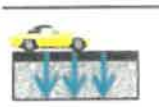





Plant Trees



Bioswale


Green Infrastructure

- Infiltrating stormwater by the use of systems such as:


 Green Roof	 Bioretention Basin	 Infiltration Basin
 Permeable Pavement	 Infiltration Trench/Tree Box	 Swale Side Slope
 Swale Main Channel	 Wet Swale	 Swale With Underdrain

USING GREEN INFRASTRUCTURE

Permeable Pavers

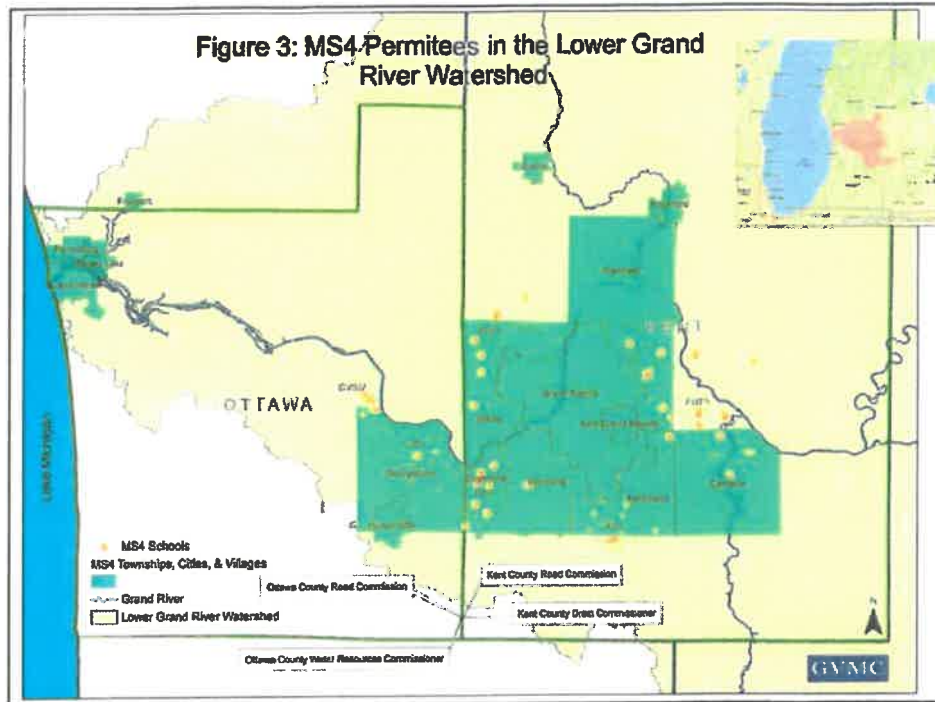


Curb Cut



Benefits of using Green Stormwater Infrastructure:

- Reduces flooding and protects property
- Reduces municipal infrastructure costs
- Provides a cost-effective alternative to traditional development (less land clearing, reduced infrastructure, etc.)
- Increases appearance and aesthetics of a community



Resources

Cara Decker

Stormwater Program Coordinator

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Ph: 616-776-7702

Wendy Ogilvie

Director of Environmental Programs

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Ph: 616-776-7605

www.lgrow.org/ms4



LOWER GRAND RIVER
ORGANIZATION OF WATERSHEDS



PERMIT NO. MI0060107



**AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**

In compliance with the provisions of the Federal Water Pollution Control Act (33 U.S.C. 1251 *et seq.*, as amended; the "Federal Act"); Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); Part 41, Sewerage Systems, of the NREPA; and Michigan Executive Order 2019-06,

Cascade Charter Township
5920 Tahoe Drive SE
Grand Rapids, MI 49546

is authorized to discharge from the Municipal Separate Storm Sewer System (MS4)

designated as **Cascade Twp MS4-Kent**

to surface waters of the state of Michigan in accordance with effluent limitations, monitoring requirements, and other conditions set forth in this permit.

This permit takes effect on July 1, 2021. This permit is based on a complete application submitted on February 27, 2008, as amended through March 19, 2021.

The provisions of this permit are severable. After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term in accordance with applicable laws and rules. On its effective date this permit shall supersede Certificate of Coverage No. MIG610116, issued on December 17, 2003, which is hereby revoked upon the effective date of this permit.

This permit and the authorization to discharge shall expire at midnight, **October 1, 2023**. In order to receive authorization to discharge beyond the date of expiration, the permittee shall submit an application which contains such information, forms, and fees as are required by the Department of Environment, Great Lakes, and Energy (Department) by **April 4, 2023**.

Issued: June 30, 2021.

Original signed by Christine Alexander
Christine Alexander, Manager
Permits Section
Water Resources Division

PERMIT FEE REQUIREMENTS

In accordance with Section 324.3118 of the NREPA, the permittee shall make payment of an annual storm water fee to the Department for each January 1 the permit is in effect regardless of occurrence of discharge. The permittee shall submit the fee in response to the Department's annual notice. Payment may be made electronically via the Department's MiWaters system. The MiWaters website is located at <https://miwaters.deq.state.mi.us>. Payment shall be submitted or postmarked by March 15 for notices mailed by February 1. Payment shall be submitted or postmarked no later than 45 days after receiving the notice for notices mailed after February 1.

Annual Permit Fee Classification: Municipal Storm Water – Population Range of fewer than 1,000 people

CONTACT INFORMATION

Unless specified otherwise, all contact with the Department required by this permit shall be made to the Grand Rapids District Office of the Water Resources Division. The Grand Rapids District Office is located at State Office Building, Fifth Floor, 350 Ottawa Ave NW, Unit 10, Grand Rapids, MI 49503-2341, Telephone: 616-356-0500, Fax: 616-356-0202.

CONTESTED CASE INFORMATION

Any person who is aggrieved by this permit may file a sworn petition with the Michigan Administrative Hearing System within the Michigan Department of Licensing and Regulatory Affairs, c/o the Michigan Department of Environment, Great Lakes, and Energy, setting forth the conditions of the permit which are being challenged and specifying the grounds for the challenge. The Department of Licensing and Regulatory Affairs may reject any petition filed more than 60 days after issuance as being untimely.

PART I**Section A. Limitations and Monitoring Requirements****1. Authorized Discharges****a. Authorized Outfalls and Points of Discharge**

This permit authorizes the discharge of storm water from the permittee's MS4 to the surface waters of the state via the outfalls and points of discharge identified in the permittee's application and as modified in accordance with this permit. Such discharges shall be controlled and monitored by the permittee in accordance with this permit.

b. Nested MS4 Discharges

This permit authorizes the discharge of storm water to surface waters of the state from a nested MS4 owned or operated by public bodies that include, but are not limited to, public school districts; public universities; airports; or county, state, or federal agencies. The permittee may request to modify permit coverage to add or remove a nested MS4 by submitting a request to the Department for approval. Modifications to the permit coverage may result in a permit modification, after opportunity for public comment.

c. Discharges Authorized Under Other National Pollutant Discharge Elimination System (NPDES) Permits
This permit does not prohibit the use of an MS4 for other discharges authorized under other NPDES permits, or equivalent Department approval under the NREPA or the Federal Act.**d. Water Quality Requirements**

Discharges from the permittee's MS4 shall not cause or contribute to an exceedance of water quality standards in the receiving waters. This includes, but is not limited to, the requirement set forth in R 323.1050 of the Water Quality Standards stating that the receiving waters shall not have any of the following unnatural physical properties as a result of the discharge, in quantities which are or may become injurious to any designated use: turbidity, color, oil films, floating solids, foams, settleable solids, suspended solids, or deposits.

2. Outfall or Point of Discharge Identified, Constructed, or Installed After Permit Issuance**a. Outfall or Point of Discharge Within the Permittee's Regulated Area**

Authorization from the Department is required to discharge storm water to a surface water of the state from an outfall or point of discharge identified, constructed, or installed after issuance but during the term of this permit and located within the permittee's regulated area as identified in the application. For each outfall or point of discharge identified, constructed, or installed after issuance but during the term of this permit, the permittee shall request authorization to discharge storm water by providing the following to the Department in a written request:

- 1) whether the discharge is from an outfall or point of discharge;
- 2) the outfall or point of discharge identification number assigned by the permittee;
- 3) the surface water of the state receiving the discharge from the outfall or point of discharge;
- 4) a certification statement that the outfall or point of discharge is within the permittee's regulated area as identified in the application;
- 5) a certification statement that the previously approved Storm Water Management Program (Part I.A.3. of this permit) includes best management practices (BMPs) to comply with the minimum requirements of the permit for the outfall or point of discharge; and

PART I**Section A. Limitations and Monitoring Requirements**

- 6) a certification statement that the previously approved Storm Water Management Program (Part I.A.3. of this permit) is being implemented in the area served by the outfall or point of discharge, including having available an up-to-date storm sewer system map required in Part I.A.3.d.1) of this permit.
- b. **Outfall or Point of Discharge Outside the Permittee's Regulated Area**
Authorization from the Department is required to discharge storm water to a surface water of the state from an outfall or point of discharge identified, constructed, or installed after issuance but during the term of this permit and located outside the permittee's regulated area as identified in the application (e.g., area served by an expanded MS4 or area previously served by a combined sewer system that is now separated). For each outfall or point of discharge identified, constructed, or installed after issuance but during the term of this permit, the permittee shall request authorization to discharge storm water by providing the following to the Department in a written request:
- 1) whether the discharge is from an outfall or point of discharge;
 - 2) the outfall or point of discharge identification number assigned by the permittee;
 - 3) the surface water of the state receiving the discharge from the outfall or point of discharge;
 - 4) a map identifying the expanded regulated area served by the permittee's MS4;
 - 5) a certification statement that the previously approved Storm Water Management Program (Part I.A.3. of this permit) includes BMPs to comply with the minimum requirements of the permit for the outfall or point of discharge and expanded regulated area; and
 - 6) a certification statement that the previously approved Storm Water Management Program (Part I.A.3. of this permit) is being implemented in the expanded regulated area served by the outfall or point of discharge, including having available an up-to-date storm sewer system map as required in Part I.A.3.d.1) of this permit.
- c. Upon review of the request to authorize the discharge from an outfall or point of discharge identified, constructed, or installed after issuance but during the term of this permit in accordance with Part I.A.2.a. or Part I.A.2.b. of this permit, the Department may determine that a permit modification is required, after opportunity for public comment. The Department will notify the permittee if a modification is required.

3. Storm Water Management Program (SWMP)

The permittee submitted a SWMP with its application for an NPDES permit. The SWMP is approved as submitted. The permittee shall implement the approved SWMP to comply with the minimum requirements identified in this permit. The SWMP shall cover the area served by, or otherwise contributing to discharges from, the MS4 owned or operated by the permittee identified in the application. The permittee shall implement and enforce the SWMP to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the NREPA and the Federal Act. The approved SWMP is an enforceable part of this permit and any Department approved modifications made to the SWMP shall also become enforceable parts of this permit.

- a. **Enforcement Response Procedure (ERP)**
The permittee shall implement the ERP for violations of the permittee's ordinances or regulatory mechanisms identified in the SWMP to the maximum extent practicable. The ERP shall be implemented to compel compliance with the permittee's ordinances and/or regulatory mechanisms and to deter continuing violations.

PART I

Section A. Limitations and Monitoring Requirements

The permittee shall track and document all enforcement conducted pursuant to the permittee's ERP. At a minimum, the permittee shall track and document the following: the name of the person responsible for violating the permittee's ordinance or regulatory mechanism; the date and location of the violation; a description of the violation; a description of the enforcement response used; a schedule for returning to compliance; and the date the violation was resolved.

b. **Public Participation/Involvement Program (PPP)**

The permittee shall implement the PPP to encourage public participation/involvement in the implementation and periodic review of the SWMP to the maximum extent practicable. The permittee shall implement the PPP as part of the SWMP. The permittee has chosen to work collaboratively with watershed or regional partners to implement the PPP or part of the PPP, therefore each permittee working collaboratively is responsible for complying with the PPP as described in the SWMP.

The PPP requires implementation of the following minimum requirements:

- 1) The procedure for making the SWMP available for public inspection and comment, including complying with local public notice requirements, as appropriate; and
- 2) The procedure for inviting public participation and involvement in the implementation and periodic review of the SWMP.

c. **Public Education Program (PEP)**

The permittee shall implement the PEP as part of the SWMP to the maximum extent practicable. At the minimum, the PEP shall promote, publicize, and facilitate education for the purpose of encouraging the public to reduce the discharge of pollutants in storm water runoff. The PEP shall be implemented to achieve measurable improvements in the public's understanding of storm water pollution and efforts to reduce the impacts of storm water pollution. The permittee has chosen to work collaboratively with watershed or regional partners to implement the PEP or part of the PEP, therefore each permittee working collaboratively is responsible for complying with the PEP as described in the SWMP.

The PEP requires implementation of the following minimum requirements:

- 1) BMPs to address the following PEP topics:
 - (a) Promote public responsibility and stewardship in the permittee's watershed.
 - (b) Inform and educate the public about the connection of the MS4 to area waterbodies and the potential impacts discharges can have on surface waters of the state.
 - (c) Educate the public on illicit discharges and promote public reporting on illicit discharges and improper disposal of materials into the MS4.
 - (d) Promote preferred cleaning materials and procedures for car, pavement, and power washing.
 - (e) Inform and educate the public on proper application and disposal of pesticides, herbicides, and fertilizers.
 - (f) Promote proper disposal practices for grass clippings, leaf litter, and animal wastes that may enter into the MS4.
 - (g) Identify and promote the availability, location, and requirements of facilities for collection or disposal of household hazardous wastes, travel trailer sanitary wastes, chemicals, and motor vehicle fluids.

PART I

Section A. Limitations and Monitoring Requirements

- (h) Inform and educate the public on proper septic system care and maintenance, and how to recognize system failure.
- (i) Educate the public on, and promote the benefits of, green infrastructure and Low Impact Development.
- (j) Promote methods for managing riparian lands to protect water quality.
- (k) Identify and educate commercial, industrial, and institutional entities likely to contribute pollutants to storm water runoff.

2) The procedure for determining the overall effectiveness of implementation and the process for modifying the PEP to address ineffective implementation. The Department may determine that a permit modification is required, after opportunity for public comment, based on modifications to the PEP. The Department will notify the permittee if a modification is required.

d. **Illicit Discharge Elimination Program (IDEP)**

The permittee shall implement and enforce the IDEP to detect and eliminate illicit discharges and connections to the permittee's MS4. The permittee shall implement the IDEP as part of the SWMP to the maximum extent practicable. The permittee has chosen to work collaboratively with watershed or regional partners to implement the IDEP or part of the IDEP, therefore each permittee working collaboratively is responsible for complying with the IDEP as described in the SWMP.

The IDEP requires implementation of the following minimum requirements:

1) An available, up-to-date storm sewer system map identifying the following: the storm sewer system, location of all outfalls and points of discharge the permittee owns or operates in the regulated area, and the names and location of all surface waters of the state that receive discharges from the permittee's MS4. The map shall be retained by the permittee and made available to the Department upon request. The map shall be maintained and updated as outfalls and points of discharge are identified, constructed, and installed in accordance with Part I.A.2. of this permit.

2) The plan to detect and eliminate non-storm water discharges to the permittee's MS4, including illegal dumping/spills. The plan includes the following:

- a) A procedure for identifying priority areas for field observations. The permittee shall conduct field observations in accordance with the procedure identifying the priority area(s) developed as part of the IDEP.
- b) A procedure for conducting field observations, field screening, and source investigations. The permittee shall conduct a field observation in accordance with the procedure during dry-weather at least once during the term of the permit. Field screening and source investigation shall be conducted in accordance with the schedule in the procedure.

Field observations, field screening, and source investigations shall include the following:

- (1) **Field Observation** – The permittee shall observe the outfall or point of discharge for the following during dry-weather in accordance with the procedure: presence/absence of flow, water clarity, color, odor, floatable materials, deposits/stains on the discharge structure and bank, vegetation condition, structural condition, and biology (e.g. bacterial sheens, algae, and slimes).

PART I

Section A. Limitations and Monitoring Requirements

(2) **Field Screening** – If flow is observed at an outfall or point of discharge, the permittee shall analyze the flow for the indicator parameters identified in the procedure. If the source of an illicit discharge is identified during the field observation, field screening may not be necessary.

(3) **Source Investigation** – If the source of the illicit discharge was not identified by the field screening, the permittee shall conduct an investigation to identify the source in accordance with the procedure. If the permittee opts to use tracer dyes, the discharge of the dyes shall be authorized in accordance with Part I.A.6. of this permit.

If the permittee is made aware of non-storm water discharges outside the priority areas, illegal dumping/spills, or complaints received, the permittee shall conduct field observations and follow-up field screening and source investigations as appropriate in accordance with the procedure, including the schedule, in the IDEP. The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state in accordance with Part II.C.7. of this permit.

c) A procedure for responding to illicit discharges and pursuing enforcement action. The permittee shall implement the procedure to respond and pursue enforcement action once the source of the illicit discharge is identified, including the corrective action required to eliminate the illicit discharge. The permittee shall also implement the procedure to respond to illegal spills/dumping. For each illicit discharge not eliminated within 90 days of its discovery, the permittee shall provide, with the next progress report due, a written certification that the illicit discharge was eliminated or a description of how the illicit discharge will be eliminated.

3) The employee training program, which includes the following:

- a) Training on techniques for identifying illicit discharges and connections, including field observations, field screening, and source investigations;
- b) Training on procedures for reporting, responding to, and eliminating an illicit discharge or connection and the proper enforcement response; and
- c) A schedule and requirement for training at least once during the term of the permit for existing staff and within the first year of hire for new staff.

4) The procedure for IDEP evaluation and determining the overall effectiveness of the IDEP.

e. **Construction Storm Water Runoff Control Program**

The permittee shall implement the construction storm water runoff control program to address areas of construction activity that disturb one (1) or more acres, including projects less than one (1) acre that are part of a larger common plan of development or sale. The permittee shall implement the construction storm water runoff control program as part of the SWMP to the maximum extent practicable.

The construction storm water runoff control program requires implementation of the following minimum requirements:

1) The procedure to notify the Part 91 Agency, or appropriate staff (if the permittee is a Part 91 Agency), when soil or sediment is discharged to the permittee's MS4 from a construction activity.

2) The procedure to notify the Department when soil, sediment, or other pollutants are discharged to the permittee's MS4 from a construction activity.

PART I**Section A. Limitations and Monitoring Requirements**

3) The procedure for ensuring that construction activity one (1) acre or greater in total earth disturbance with the potential to discharge to the permittee's MS4 obtains a Part 91 permit or is conducted by an approved Authorized Public Agency, as appropriate.

4) The procedure to advise the landowner or recorded easement holder of the State of Michigan Permit by Rule (R 323.2190 of the Part 21 Rules promulgated pursuant to Part 31 of the NREPA).

f. **Post-Construction Storm Water Runoff Program**

The permittee shall implement and enforce the program to address post-construction storm water runoff from new development and redevelopment projects that disturb one (1) or more acres, including projects less than one (1) acre that are part of a larger common plan of development or sale, and that discharge into the permittee's MS4. The permittee shall implement and enforce the post-construction storm water control program as part of the SWMP, to the maximum extent practicable and in accordance with the approved ordinance or regulatory mechanism.

1) On or before January 1, 2022, the permittee shall adopt the Post-Construction Storm Water Control standard submitted on March 19, 2021 to achieve the post-construction storm water runoff performance standards set forth in a) and b) below at the project site (including projects where the permittee is the project developer). The permittee shall implement and enforce the ordinance requiring implementation of BMPs by the project developer (including the permittee if the permittee is the project developer) to achieve the post-construction storm water runoff performance standards at the project site to the maximum extent practicable.

a) **Water Quality Treatment Performance Standard**
Treat the runoff generated from 90 percent of all runoff-producing storms. BMPs shall be designed on a site-specific basis to achieve a minimum of 80 percent removal of total suspended solids (TSS) as compared with uncontrolled runoff or a discharge concentration of TSS not to exceed 80 milligrams per liter (mg/l).

b) **Channel Protection Performance Standard**
The post-construction runoff rate and volume of discharges shall not exceed the pre-development rate and volume for the project site for all storms up to the two-year, 24-hour storm. The permittee is allowed to implement and enforce the ordinance approving extended detention in accordance with the alternative approach. The alternative approach is limited to implementation only where site constraints limit reducing the discharge of stormwater runoff and after the evaluation of all other onsite BMPs, including green infrastructure options identified in the ordinance.

2) The permittee shall implement and enforce the following site-specific requirements as part of meeting the post-construction storm water runoff performance standards set forth in a) and b), above:

a) The procedure for reviewing the use of infiltration BMPs to achieve the performance standards in areas of soil or groundwater contamination in a manner that does not exacerbate existing conditions.

b) The ordinance or regulatory mechanism requiring BMPs to address the associated pollutants in potential hot spots as part of meeting the performance standards. Hot spots include areas with the potential for significant pollutant loading including, but not limited to, the following: gas stations; vehicle maintenance and repair; auto recyclers; recycling centers and scrap yards; landfills; solid waste facilities; and railroads. Hot spots also include areas with the potential for contaminating public water supply intakes.

PART I

Section A. Limitations and Monitoring Requirements

3) All structural and vegetative BMPs installed and implemented to meet the performance standards shall be operated and maintained in perpetuity. The permittee shall implement and enforce the ordinance or regulatory mechanism program to ensure long-term operation and maintenance of BMPs.

4) The ordinance or regulatory mechanism and procedures for site plan review and approval for projects that disturb one (1) or more acres, including projects less than one (1) acre that are part of a larger common plan of development or sale, and discharge to the permittee's MS4, including projects where the permittee is the developer. The site plan review and approval shall demonstrate compliance with the performance standards and long-term operation and maintenance requirements of this permit.

g. **Pollution Prevention and Good Housekeeping Activities for Municipal Operations**
The permittee shall implement the pollution prevention and good housekeeping program with the goal of preventing or reducing pollutant runoff from municipal facilities and operations that discharge storm water to surface waters of the state. The permittee shall implement the program as part of the SWMP to the maximum extent practicable.

1) **Municipal Facility and Structural Storm Water Control Inventory**
The permittee shall make available to the Department upon request an up-to-date map or maps of the facilities and structural storm water controls owned or operated by the permittee with a discharge to surface waters of the state in the regulated area. In accordance with the procedure for updating and revising the permittee's facility inventory and map(s), the permittee shall submit to the Department the type and location for any new facility obtained or constructed during this permit term with a discharge of storm water to surface waters of the state and the information requested in Part I.A.2. of the permit.

2) **Facility-Specific Storm Water Management**
The permittee shall implement the BMPs identified in the procedure to prevent or reduce pollutant runoff at each facility the permittee identified as having the medium or low potential to discharge pollutants to surface waters of the state. The permittee shall assess new facilities for the potential to discharge pollutants to surface waters of the state in accordance with the procedure to determine a priority level. High-priority facilities shall include permittee-owned or operated fleet maintenance and storage yards unless a demonstration is submitted and approved by the Department demonstrating how the permittee's fleet maintenance or storage yard has the low potential to discharge pollutants to surface waters of the state. The assessment shall be submitted in writing to the Department for approval within 30 days of ownership or operation of the new facility. The permittee shall certify in writing to the Department that a facility-specific SOP is being implemented within 90 days of ownership or operation of a new high-priority facility. Within 90 days of ownership or operation, the permittee shall certify in writing to the Department that BMPs are being implemented in accordance with the procedure developed to prevent or reduce pollutant runoff at each new medium- or low-priority facility. For new facilities, the Department may determine that a permit modification is required, after opportunity for public comment. The Department will notify the permittee if a modification is required. The permittee shall document all other changes to the facility assessment as part of the progress report and as an update to the procedure.

The facility-specific SOP shall be kept at the site described in the SOP and made available upon request by the Department. The facility-specific SOP for each high-priority facility shall include implementation of the following.

- a) Structural and non-structural storm water controls to prevent or reduce the discharge of pollutants to surface waters of the state.
- b) Up-to-date list of significant materials stored on-site that could pollute storm water with a description of the handling and storage requirements and potential to discharge for each significant material.

PART I**Section A. Limitations and Monitoring Requirements**

- c) Good housekeeping practices including, but not limited to, maintaining a clean and orderly facility, properly storing and covering materials, and minimizing pollutant sources to prevent or reduce pollutant runoff.
 - d) Routine maintenance and inspections of storm water management and control devices to ensure materials and equipment are clean and orderly and prevent or reduce pollutant runoff. The written report of the inspection and corrective actions shall be retained in accordance with Part II.B.5. of this permit.
 - e) Comprehensive site inspections at least once every six (6) months. The comprehensive site inspection shall include an inspection of all structural storm water controls and a review of non-structural storm water controls to prevent or reduce pollutant runoff. A written report of the inspection and corrective actions shall be retained in accordance with Part II.B.5. of this permit.
- 3) **Structural Storm Water Control Operation and Maintenance Activities**
- a) The permittee shall implement the procedures for inspecting, cleaning, and maintaining permittee-owned or operated catch basins in the regulated area using the priority level assigned to each catch basin. The permittee shall document changes to the priority level for a catch basin as part of the progress report and as an update to the procedure.

The permittee shall also implement the procedure for dewatering and disposal of materials extracted from the catch basins in accordance with Part 111 (Hazardous Waste), Part 115 (Solid Waste), and Part 121 (Liquid Industrial Waste) of the NREPA.
 - b) The permittee shall implement the procedure for inspecting and maintaining permittee-owned or operated structural storm water controls other than catch basins in the regulated area. The permittee shall document changes to the procedure as part of the progress report and as an update to the procedure.
 - c) The permittee shall implement the procedure requiring that new permittee-owned or operated facilities or structural storm water controls to address water quantity be designed and implemented in accordance with the post-construction storm water runoff performance standards and long-term operation and maintenance requirements in Part I.A.3.f. of this permit.
- 4) **Municipal Operations and Maintenance Activities**
- a) The permittee shall implement the procedure, including the BMPs identified, to prevent or reduce pollutant runoff from the permittee's operation and maintenance activities identified in the SWMP. The permittee shall document changes to the assessment of operation and maintenance activities for the potential to discharge pollutants to surface waters of the state as part of the progress report and as an update to the procedure.
 - b) The permittee shall implement the procedure for the street sweeping program for permittee-owned or operated streets, parking lots, or other impervious infrastructure in the regulated area using the sweeping methods and assigned priority levels identified in the procedure. The permittee shall document changes to the priority level for a street, parking lot, or other impervious infrastructure as part of the progress report and as an update to the procedure.

The permittee shall also implement the procedure for dewatering and disposal of street sweeper waste material.

PART I**Section A. Limitations and Monitoring Requirements****5) Managing Vegetated Properties**

The permittee shall implement the procedure requiring the permittee's pesticide applicator to be certified by the State of Michigan as an applicator in the applicable category, to prevent or reduce pollutant runoff from vegetated land.

6) Employee Training

The permittee shall implement the employee training program to train employees involved in implementing pollution prevention and good housekeeping activities. At a minimum, existing staff shall be trained once during the permit cycle and new hire employees within the first year of their hire date.

7) Contractor Requirements and Oversight

The permittee shall implement the procedure requiring contractors hired by the permittee to perform municipal operation and maintenance activities that comply with the permittee's pollution prevention and good housekeeping program and contractor oversight to ensure compliance.

4. SWMP Modifications**a. SWMP Modifications Requested by the Permittee**

Modifications to the previously approved SWMP may be requested by the permittee as follows:

1) Modifications adding BMPs (but not replacing, subtracting, or affecting the level of implementation of any other BMP) to the previously approved SWMP may be made by the permittee at any time upon written notification to the Department. Notification shall include a description of the modification, which may include a description of a new BMP with a corresponding measurable goal. Upon notification to the Department, the modification is considered an enforceable part of the approved SWMP.

2) Modifications replacing an ineffective or unfeasible BMP identified in the previously approved SWMP with an alternative BMP may be requested at any time by written notification to the Department. The ineffective or unfeasible BMP identified shall not be replaced in the previously approved SWMP unless the replacement is approved by the Department. Modifications to the previously approved SWMP may result in a permit modification after opportunity for public comment. Such requests shall include the following:

- a) an analysis of why the BMP is ineffective or unfeasible (including cost-prohibitive);
- b) a measurable goal for the replacement BMP; and
- c) an analysis of why the replacement BMP is expected to achieve the intent of the BMP to be replaced.

3) Modifications subtracting an ineffective or unfeasible BMP identified in the previously approved SWMP may be requested by written notification to the Department. The identified BMP shall not be subtracted from the previously approved SWMP unless the subtraction is approved by the Department. Modifications to the previously approved SWMP may result in a permit modification after opportunity for public comment. Such requests shall include the following:

- a) an analysis of why the BMP is ineffective or unfeasible (including cost prohibitive); and
- b) a determination of why the removal of the BMP will not change the permittee's ability to comply with the permit requirements.

PART I**Section A. Limitations and Monitoring Requirements****b. Modifications Required by the Department**

The Department may require the permittee to modify the SWMP as needed to:

- 1) address contributions from the permittee's MS4 discharge that impair receiving water quality;
- 2) include more stringent requirements necessary to comply with new state or federal statutory or regulatory requirements; and/or
- 3) include such other conditions deemed necessary by the Department to comply with the goals and requirements of the Federal Act or the NREPA, including the requirement to reduce the discharge of pollutants from the MS4 to the maximum extent practicable.

5. Request for Approval to Use Water Treatment Additives

This permit does not authorize the use of any water treatment additive without prior written approval from the Department. Such approval is authorized under separate correspondence. Water treatment additives include any materials that are added to water used at the facility, or to wastewater generated by the facility, to condition or treat the water. Permittees proposing to use water treatment additives, including a proposed increased concentration of a previously approved water treatment additive, shall submit a request for approval via the Department's MiWaters system. The MiWaters website is located at <https://miwaters.deq.state.mi.us>. Instructions for submitting such a request may be obtained at <http://www.michigan.gov/npdes> (near the bottom of that page, click on one or both of the links located under the Water Treatment Additives banner). Additional monitoring and reporting may be required as a condition of approval to use the water treatment additive.

A request for approval to use water treatment additives shall include all of the following usage and discharge information for each water treatment additive proposed to be used:

- a. The Safety Data Sheet (SDS);
- b. Ingredient information, including the name of each ingredient, CAS number for each ingredient, and fractional content by weight for each ingredient;
- c. The proposed water treatment additive discharge concentration with supporting calculations;
- d. The discharge frequency (i.e., number of hours per day and number of days per year);
- e. The outfall(s) and monitoring point(s) from which the water treatment additive is to be discharged;
- f. The type of removal treatment, if any, that the water treatment additive receives prior to discharge;
- g. The water treatment additive's function (i.e., microbiocide, flocculant, etc.);
- h. The SDS shall include a 48-hour LC50 or EC50 for a North American freshwater planktonic crustacean (either *Ceriodaphnia* sp., *Daphnia* sp., or *Simocephalus* sp.); The results shall be based on the whole water treatment additive, shall not be results based on a similar product, and shall not be estimated; and
- i. The SDS shall include the results of a toxicity test for one (1) other North American freshwater aquatic species (other than a planktonic crustacean) that meets a minimum requirement of R 323.1057(2) of the Water Quality Standards. The results shall be based on the whole water treatment additive, shall not be results based on a similar product, and shall not be estimated. Examples of tests that would meet this requirement include a 96-hour LC50 for rainbow trout, bluegill, or fathead minnow.

PART I**Section A. Limitations and Monitoring Requirements****6. Tracer Dye Discharges**

This permit does not authorize the discharge of tracer dyes without approval from the Department. Requests to discharge tracer dyes shall be submitted to the Department in accordance with Rule 1097 (R 323.1097 of the Michigan Administrative Code).

7. Storm Water Program Manager (Facility Contact)

The "Facility Contact" was specified in the application. The permittee may replace the facility contact at any time, and shall notify the Department in writing within 10 days after replacement (including the name, address and telephone number of the new facility contact).

- a. The facility contact shall be (or a duly authorized representative of this person):
 - for a corporation, a principal executive officer of at least the level of vice president; or a designated representative if the representative is responsible for the overall operation of the facility from which the discharge originates, as described in the permit application or other NPDES form,
 - for a partnership, a general partner,
 - for a sole proprietorship, the proprietor, or
 - for a municipal, state, or other public facility, either a principal executive officer, the mayor, village president, city or village manager or other duly authorized employee.
- b. A person is a duly authorized representative only if:
 - the authorization is made in writing to the Department by a person described in paragraph a. of this section; and
 - the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the facility (a duly authorized representative may thus be either a named individual or any individual occupying a named position).

Nothing in this section obviates the permittee from properly submitting reports and forms as required by law.

PART I**Section B. Program Assessment and Reporting****1. Progress Reports**

Progress reports shall be submitted on or before October 1, 2021, April 1, 2023 and on or before April 1 every two (2) years following. The Department may approve alternate dates for progress report submittal if requested and adequately justified by the permittee. Each progress report shall contain the following information for the entire period that has elapsed since the last progress report submittal (i.e., the reporting cycle):

- a. **Compliance Assessment**

The permittee shall describe the status of compliance with the approved SWMP identified in Part I.A.3 of this permit. The permittee shall assess and describe the appropriateness of the BMPs identified in the SWMP. The report shall describe the progress made towards achieving the identified measurable goals for each of the BMPs, and specific evaluation criteria as follows:

 - 1) For the PEP, provide a summary of the evaluation of the overall effectiveness of the PEP, using the evaluation methods described in the PEP.
 - 2) For the IDEP, provide a summary of the evaluation and determination of the overall effectiveness of the IDEP, using the evaluation methods described in the IDEP. For each illicit discharge that was not eliminated within 90 days of its discovery the permittee shall provide a written certification that the illicit discharge was eliminated or a description of how the illicit discharge will be eliminated.
 - 3) If applicable, the permittee shall submit to the Department any new outfall or point of discharge information as required in Part I.A.2. of this permit.
- b. **Data and Results**

The permittee shall provide a summary of all of the information collected and analyzed, including monitoring data, if any, during the reporting cycle.
- c. **Upcoming Activities**

The permittee shall provide a summary of the BMPs to be implemented during the next reporting cycle.
- d. **Changes to BMPs and Measurable Goals**

The permittee shall describe any changes to BMPs or measurable goals in the approved SWMP. In accordance with the permit, these changes will be reviewed to determine if a permit modification is necessary. The Department will notify the permittee if a permit modification is required.
- e. **Notice of Changes in Nested Jurisdiction Agreements**

The permittee shall identify any nested jurisdictions that enter into or terminate permit agreements with the permittee which were not identified in the SWMP. The permittee may request to modify the permit coverage to add or remove a nested MS4 by submitting a request to the Department for approval in accordance with Part I.A.1.b. of this permit. Modifications to the permit coverage may result in a permit modification, after opportunity for public comment.
- f. **Required Signatures**

All reports required by this permit, and other information requested by the Department, shall be signed by either a principal executive officer or ranking elected official, or by a duly authorized representative of that person in accordance with 40 CFR 122.22(b).

PART II

Part II may include terms and /or conditions not applicable to discharges covered under this permit.

Section A. Definitions

Acute toxic unit (TU_A) means $100/LC_{50}$ where the LC_{50} is determined from a whole effluent toxicity (WET) test which produces a result that is statistically or graphically estimated to be lethal to 50% of the test organisms.

Annual monitoring frequency refers to a calendar year beginning on January 1 and ending on December 31. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Authorized public agency means a state, local, or county agency that is designated pursuant to the provisions of Section 9110 of Part 91, Soil and Sedimentation Control, of the NREPA, to implement soil erosion and sedimentation control requirements with regard to construction activities undertaken by that agency.

Best management practices (BMPs) means structural devices or nonstructural practices that are designed to prevent pollutants from entering into storm water, to direct the flow of storm water, or to treat polluted storm water.

Bioaccumulative chemical of concern (BCC) means a chemical which, upon entering the surface waters, by itself or as its toxic transformation product, accumulates in aquatic organisms by a human health bioaccumulation factor of more than 1000 after considering metabolism and other physiochemical properties that might enhance or inhibit bioaccumulation. The human health bioaccumulation factor shall be derived according to R 323.1057(5). Chemicals with half-lives of less than 8 weeks in the water column, sediment, and biota are not BCCs. The minimum bioaccumulation concentration factor (BAF) information needed to define an organic chemical as a BCC is either a field-measured BAF or a BAF derived using the biota-sediment accumulation factor (BSAF) methodology. The minimum BAF information needed to define an inorganic chemical as a BCC, including an organometal, is either a field-measured BAF or a laboratory-measured bioconcentration factor (BCF). The BCCs to which these rules apply are identified in Table 5 of R 323.1057 of the Water Quality Standards.

Biosolids are the solid, semisolid, or liquid residues generated during the treatment of sanitary sewage or domestic sewage in a treatment works. This includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a derivative of the removed scum or solids.

Bulk biosolids means biosolids that are not sold or given away in a bag or other container for application to a lawn or home garden.

Certificate of Coverage (COC) is a document, issued by the Department, which authorizes a discharge under a general permit.

Chronic toxic unit (TU_C) means $100/MATC$ or $100/IC_{25}$, where the maximum acceptable toxicant concentration (MATC) and IC_{25} are expressed as a percent effluent in the test medium.

Class B biosolids refers to material that has met the Class B pathogen reduction requirements or equivalent treatment by a Process to Significantly Reduce Pathogens (PSRP) in accordance with the Part 24 Rules, Land Application of Biosolids, promulgated under Part 31 of the NREPA. Processes include aerobic digestion, composting, anaerobic digestion, lime stabilization and air drying.

Combined sewer system is a sewer system in which storm water runoff is combined with sanitary wastes.

Continuous monitoring refers to sampling/readings that occur at regular and consistent intervals throughout a 24-hour period and at a frequency sufficient to capture data that are representative of the discharge. The maximum acceptable interval between samples/readings shall be one (1) hour.

PART II**Section A. Definitions****Daily concentration**

FOR PARAMETERS OTHER THAN pH, DISSOLVED OXYGEN, TEMPERATURE, AND CONDUCTIVITY – Daily concentration is the sum of the concentrations of the individual samples of a parameter taken within a calendar day divided by the number of samples taken within that calendar day. The daily concentration will be used to determine compliance with any maximum and minimum daily concentration limitations. For guidance and examples showing how to perform calculations using results below quantification levels, see the document entitled "Reporting Results Below Quantification," available at https://www.michigan.gov/documents/deq/wrd-npdes-results-quantification_620791_7.pdf.

FOR pH, DISSOLVED OXYGEN, TEMPERATURE, AND CONDUCTIVITY – The daily concentration used to determine compliance with maximum daily pH, temperature, and conductivity limitations is the highest pH, temperature, and conductivity readings obtained within a calendar day. The daily concentration used to determine compliance with minimum daily pH and dissolved oxygen limitations is the lowest pH and dissolved oxygen readings obtained within a calendar day.

Daily loading is the total discharge by weight of a parameter discharged during any calendar day. This value is calculated by multiplying the daily concentration by the total daily flow and by the appropriate conversion factor. The daily loading will be used to determine compliance with any maximum daily loading limitations. When required by the permit, report the maximum calculated daily loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMRs.

Daily monitoring frequency refers to a 24-hour day. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Department means the Michigan Department of Environment, Great Lakes, and Energy.

Detection level means the lowest concentration or amount of the target analyte that can be determined to be different from zero by a single measurement at a stated level of probability.

Discharge means the addition of any waste, waste effluent, wastewater, pollutant, or any combination thereof to any surface water of the state.

EC₅₀ means a statistically or graphically estimated concentration that is expected to cause 1 or more specified effects in 50% of a group of organisms under specified conditions.

Fecal coliform bacteria monthly

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a discharge event. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR. If the period in which the discharge event occurred was partially in each of two months, the calculated monthly value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria monthly is the geometric mean of all daily concentrations determined during a reporting month. Days on which no daily concentration is determined shall not be used to determine the calculated monthly value. The calculated monthly value will be used to determine compliance with the maximum monthly fecal coliform bacteria limitations. When required by the permit, report the calculated monthly value in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

PART II**Section A. Definitions****Fecal coliform bacteria 7-day**

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days of discharge during a discharge event. If the number of daily concentrations determined during the discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean value for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. If the 7-day period was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – Fecal coliform bacteria 7-day is the geometric mean of the daily concentrations determined during any 7 consecutive days in a reporting month. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. Days on which no daily concentration is determined shall not be used to determine the value. The calculated 7-day value will be used to determine compliance with the maximum 7-day fecal coliform bacteria limitations. When required by the permit, report the maximum calculated 7-day geometric mean for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs. The first calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

Flow-proportioned sample is a composite sample with the sample volume proportional to the effluent flow.

General permit means an NPDES permit authorizing a category of similar discharges.

Geometric mean is the average of the logarithmic values of a base 10 data set, converted back to a base 10 number.

Grab sample is a single sample taken at neither a set time nor flow.

IC₂₅ means the toxicant concentration that would cause a 25% reduction in a nonquantal biological measurement for the test population.

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

Illicit discharge means any discharge to, or seepage into, a municipal separate storm sewer system that is not composed entirely of storm water or uncontaminated groundwater. Illicit discharges include non-storm water discharges through pipes or other physical connections; dumping of motor vehicle fluids, household hazardous wastes, domestic animal wastes, or litter; collection and intentional dumping of grass clippings or leaf litter; or unauthorized discharges of sewage, industrial waste, restaurant wastes, or any other non-storm water waste directly into a separate storm sewer.

Individual permit means a site-specific NPDES permit.

Inlet means a catch basin, roof drain, conduit, drain tile, retention pond riser pipe, sump pump, or other point where storm water or wastewater enters into a closed conveyance system prior to discharge off site or into waters of the state.

PART II**Section A. Definitions**

Interference is a discharge which, alone or in conjunction with a discharge or discharges from other sources, both: 1) inhibits or disrupts a POTW, its treatment processes or operations, or its sludge processes, use or disposal; and 2) therefore, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or, of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent state or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including state regulations contained in any state sludge management plan prepared pursuant to Subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act. [This definition does not apply to sample matrix interference].

Land application means spraying or spreading biosolids or a biosolids derivative onto the land surface, injecting below the land surface, or incorporating into the soil so that the biosolids or biosolids derivative can either condition the soil or fertilize crops or vegetation grown in the soil.

LC₅₀ means a statistically or graphically estimated concentration that is expected to be lethal to 50% of a group of organisms under specified conditions.

Maximum acceptable toxicant concentration (MATC) means the concentration obtained by calculating the geometric mean of the lower and upper chronic limits from a chronic test. A lower chronic limit is the highest tested concentration that did not cause the occurrence of a specific adverse effect. An upper chronic limit is the lowest tested concentration which did cause the occurrence of a specific adverse effect and above which all tested concentrations caused such an occurrence.

Maximum extent practicable means implementation of best management practices by a public body to comply with an approved storm water management program as required by a national permit for a municipal separate storm sewer system, in a manner that is environmentally beneficial, technically feasible, and within the public body's legal authority.

MBTU/hr means million British Thermal Units per hour.

MGD means million gallons per day.

Monthly concentration is the sum of the daily concentrations determined during a reporting period divided by the number of daily concentrations determined. The calculated monthly concentration will be used to determine compliance with any maximum monthly concentration limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly concentration in the "AVERAGE" column under "QUALITY OR CONCENTRATION" on the DMR.

For minimum percent removal requirements, the monthly influent concentration and the monthly effluent concentration shall be determined. The calculated monthly percent removal, which is equal to 100 times the quantity [1 minus the quantity (monthly effluent concentration divided by the monthly influent concentration)], shall be reported in the "MINIMUM" column under "QUALITY OR CONCENTRATION" on the DMRs.

Monthly loading is the sum of the daily loadings of a parameter divided by the number of daily loadings determined during a reporting period. The calculated monthly loading will be used to determine compliance with any maximum monthly loading limitations. Days with no discharge shall not be used to determine the value. When required by the permit, report the calculated monthly loading in the "AVERAGE" column under "QUANTITY OR LOADING" on the DMR.

Monthly monitoring frequency refers to a calendar month. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Municipal separate storm sewer means a conveyance or system of conveyances designed or used for collecting or conveying storm water which is not a combined sewer and which is not part of a POTW as defined in the Code of Federal Regulations at 40 CFR 122.2.

PART II**Section A. Definitions**

Municipal separate storm sewer system (MS4) means all separate storm sewers that are owned or operated by the United States, a state, city, village, township, county, district, association, or other public body created by or pursuant to state law, having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under state law, such as a sewer district, flood control district, or drainage district, or similar entity, or a designated or approved management agency under Section 208 of the Clean Water Act that discharges to the waters of the state. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

National Pretreatment Standards are the regulations promulgated by or to be promulgated by the Federal Environmental Protection Agency pursuant to Section 307(b) and (c) of the Clean Water Act. The standards establish nationwide limits for specific industrial categories for discharge to a POTW.

No observed adverse effect level (NOAEL) means the highest tested dose or concentration of a substance which results in no observed adverse effect in exposed test organisms where higher doses or concentrations result in an adverse effect.

Noncontact cooling water is water used for cooling which does not come into direct contact with any raw material, intermediate product, by-product, waste product or finished product.

Nondomestic user is any discharger to a POTW that discharges wastes other than or in addition to water-carried wastes from toilet, kitchen, laundry, bathing or other facilities used for household purposes.

Nonstructural controls are practices or procedures implemented by employees at a facility to manage storm water or to prevent contamination of storm water.

NPDES means National Pollutant Discharge Elimination System.

Outfall is the location at which a point source discharge first enters a surface water of the state.

Part 91 agency means an agency that is designated by a county board of commissioners pursuant to the provisions of Section 9105 of Part 91 of the NREPA; an agency that is designated by a city, village, or township in accordance with the provisions of Section 9106 of Part 91 of the NREPA; or the Department for soil erosion and sedimentation control activities under Part 615, Supervisor of Wells; Part 631, Reclamation of Mining Lands; or Part 632, Nonferrous Metallic Mineral Mining, of the NREPA, pursuant to the provisions of Section 9115 of Part 91 of the NREPA.

Part 91 permit means a soil erosion and sedimentation control permit issued by a Part 91 agency pursuant to the provisions of Part 91 of the NREPA.

Partially treated sewage is any sewage, sewage and storm water, or sewage and wastewater, from domestic or industrial sources that is treated to a level less than that required by the permittee's NPDES permit, or that is not treated to national secondary treatment standards for wastewater, including discharges to surface waters from retention treatment facilities.

Point of discharge is the location of a point source discharge where storm water is discharged directly into a separate storm sewer system.

Point source discharge means a discharge from any discernible, confined, discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, or rolling stock. Changing the surface of land or establishing grading patterns on land will result in a point source discharge where the runoff from the site is ultimately discharged to waters of the state.

Polluting material means any material, in solid or liquid form, identified as a polluting material under the Part 5 Rules, Spillage of Oil and Polluting Materials, promulgated under Part 31 of the NREPA (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

PART II**Section A. Definitions**

POTW is a publicly owned treatment work.

Predevelopment is the last land use prior to the planned new development or redevelopment.

Pretreatment is reducing the amount of pollutants, eliminating pollutants, or altering the nature of pollutant properties to a less harmful state prior to discharge into a public sewer. The reduction or alteration can be by physical, chemical, or biological processes, process changes, or by other means. Dilution is not considered pretreatment unless expressly authorized by an applicable National Pretreatment Standard for a particular industrial category.

Public (as used in the MS4 individual permit) means all persons who potentially could affect the authorized storm water discharges, including, but not limited to, residents, visitors to the area, public employees, businesses, industries, and construction contractors and developers.

Public body means the United States; the state of Michigan; a city, village, township, county, school district, public college or university, or single-purpose governmental agency; or any other body which is created by federal or state statute or law.

Qualified Personnel means an individual who meets qualifications acceptable to the Department and who is authorized by an Industrial Storm Water Certified Operator to collect the storm water sample.

Qualifying storm event means a storm event causing greater than 0.1 inch of rainfall and occurring at least 72 hours after the previous measurable storm event that also caused greater than 0.1 inch of rainfall. Upon request, the Department may approve an alternate definition meeting the condition of a qualifying storm event.

Quantification level means the measurement of the concentration of a contaminant obtained by using a specified laboratory procedure calculated at a specified concentration above the detection level. It is considered the lowest concentration at which a particular contaminant can be quantitatively measured using a specified laboratory procedure for monitoring of the contaminant.

Quarterly monitoring frequency refers to a three month period, defined as January through March, April through June, July through September, and October through December. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

Regional Administrator is the Region 5 Administrator, U.S. EPA, located at R-19J, 77 W. Jackson Blvd., Chicago, Illinois 60604.

Regulated area means the permittee's urbanized area, where urbanized area is defined as a place and its adjacent densely-populated territory that together have a minimum population of 50,000 people as defined by the United States Bureau of the Census and as determined by the latest available decennial census.

Secondary containment structure means a unit, other than the primary container, in which significant materials are packaged or held, which is required by state or federal law to prevent the escape of significant materials by gravity into sewers, drains, or otherwise directly or indirectly into any sewer system or to the surface waters or groundwaters of the state.

Separate storm sewer system means a system of drainage, including, but not limited to, roads, catch basins, curbs, gutters, parking lots, ditches, conduits, pumping devices, or man-made channels, which is not a combined sewer where storm water mixes with sanitary wastes, and is not part of a POTW.

Significant industrial user is a nondomestic user that: 1) is subject to Categorical Pretreatment Standards under 40 CFR 403.8 and 40 CFR Chapter I, Subchapter N; or 2) discharges an average of 25,000 gallons per day or more of process wastewater to a POTW (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the permittee as defined in 40 CFR 403.12(a) on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's treatment plant operation or violating any pretreatment standard or requirement (in

PART II**Section A. Definitions**

accordance with 40 CFR 403.8(f)(6)).

Significant materials means any material which could degrade or impair water quality, including but not limited to: raw materials; fuels; solvents, detergents, and plastic pellets; finished materials such as metallic products; hazardous substances designated under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (see 40 CFR 372.65); any chemical the facility is required to report pursuant to Section 313 of Emergency Planning and Community Right-to-Know Act (EPCRA); polluting materials as identified under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code); Hazardous Wastes as defined in Part 111, Hazardous Waste Management, of the NREPA; fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills and significant leaks means any release of a polluting material reportable under the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code).

Special-use area means storm water discharges for which the Department has determined that additional monitoring is needed from: secondary containment structures required by state or federal law; lands on Michigan's List of Sites of Environmental Contamination pursuant to Part 201, Environmental Remediation, of the NREPA; and/or areas with other activities that may contribute pollutants to the storm water.

Stoichiometric means the quantity of a reagent calculated to be necessary and sufficient for a given chemical reaction.

Storm water means storm water runoff, snow melt runoff, surface runoff and drainage, and non-storm water included under the conditions of this permit.

Storm water discharge point is the location where the point source discharge of storm water is directed to surface waters of the state or to a separate storm sewer. It includes the location of all point source discharges where storm water exits the facility, including *outfalls* which discharge directly to surface waters of the state, and *points of discharge* which discharge directly into separate storm sewer systems.

Structural controls are physical features or structures used at a facility to manage or treat storm water.

SWPPP means the Storm Water Pollution Prevention Plan prepared in accordance with this permit.

Tier I value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier I toxicity database.

Tier II value means a value for aquatic life, human health or wildlife calculated under R 323.1057 of the Water Quality Standards using a tier II toxicity database.

Total maximum daily loads (TMDLs) are required by the Clean Water Act for waterbodies that do not meet water quality standards. TMDLs represent the maximum daily load of a pollutant that a waterbody can assimilate and meet water quality standards, and an allocation of that load among point sources, nonpoint sources, and a margin of safety.

Toxicity reduction evaluation (TRE) means a site-specific study conducted in a stepwise process designed to identify the causative agents of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

Water Quality Standards means the Part 4 Water Quality Standards promulgated pursuant to Part 31 of the NREPA, being R 323.1041 through R 323.1117 of the Michigan Administrative Code.

Weekly monitoring frequency refers to a calendar week which begins on Sunday and ends on Saturday. When required by this permit, an analytical result, reading, value or observation shall be reported for that period if a discharge occurs during that period.

WWSL is a wastewater stabilization lagoon.

PART II**Section A. Definitions**

WWSL discharge event is a discrete occurrence during which effluent is discharged to the surface water up to 10 days of a consecutive 14 day period.

3-portion composite sample is a sample consisting of three equal-volume grab samples collected at equal intervals over an 8-hour period.

7-day concentration

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily concentrations determined. If the number of daily concentrations determined during the WWSL discharge event is less than 7 days, the number of actual daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations. When required by the permit, report the maximum calculated 7-day concentration for the WWSL discharge event in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day concentration is the sum of the daily concentrations determined during any 7 consecutive days in a reporting month divided by the number of daily concentrations determined. If the number of daily concentrations determined is less than 7, the actual number of daily concentrations determined shall be used for the calculation. The calculated 7-day concentration will be used to determine compliance with any maximum 7-day concentration limitations in the reporting month. When required by the permit, report the maximum calculated 7-day concentration for the month in the "MAXIMUM" column under "QUALITY OR CONCENTRATION" on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

7-day loading

FOR WWSLs THAT COLLECT AND STORE WASTEWATER AND ARE AUTHORIZED TO DISCHARGE ONLY IN THE SPRING AND/OR FALL ON AN INTERMITTENT BASIS – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days of discharge during a WWSL discharge event divided by the number of daily loadings determined. If the number of daily loadings determined during the WWSL discharge event is less than 7 days, the number of actual daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations. When required by the permit, report the maximum calculated 7-day loading for the WWSL discharge event in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMR. If the WWSL discharge event was partially in each of two months, the value shall be reported on the DMR of the month in which the last day of discharge occurred.

FOR ALL OTHER DISCHARGES – The 7-day loading is the sum of the daily loadings determined during any 7 consecutive days in a reporting month divided by the number of daily loadings determined. If the number of daily loadings determined is less than 7, the actual number of daily loadings determined shall be used for the calculation. The calculated 7-day loading will be used to determine compliance with any maximum 7-day loading limitations in the reporting month. When required by the permit, report the maximum calculated 7-day loading for the month in the "MAXIMUM" column under "QUANTITY OR LOADING" on the DMR. The first 7-day calculation shall be made on day 7 of the reporting month, and the last calculation shall be made on the last day of the reporting month.

24-hour composite sample is a flow-proportioned composite sample consisting of hourly or more frequent portions that are taken over a 24-hour period. A time-proportioned composite sample may be used upon approval of the Department if the permittee demonstrates it is representative of the discharge.

PART II

Section B. Monitoring Procedures

1. Representative Samples

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge.

2. Test Procedures

Test procedures for the analysis of pollutants shall conform to regulations promulgated pursuant to Section 304(h) of the Clean Water Act (40 CFR Part 136 – Guidelines Establishing Test Procedures for the Analysis of Pollutants), unless specified otherwise in this permit. **Test procedures used shall be sufficiently sensitive to determine compliance with applicable effluent limitations.** Requests to use test procedures not promulgated under 40 CFR Part 136 for pollutant monitoring required by this permit shall be made in accordance with the Alternate Test Procedures regulations specified in 40 CFR 136.4. These requests shall be submitted to the Manager of the Permits Section, Water Resources Division, Michigan Department of Environment, Great Lakes, and Energy, P.O. Box 30458, Lansing, Michigan, 48909-7958. The permittee may use such procedures upon approval.

The permittee shall periodically calibrate and perform maintenance procedures on all analytical instrumentation at intervals to ensure accuracy of measurements. The calibration and maintenance shall be performed as part of the permittee's laboratory Quality Assurance/Quality Control program.

3. Instrumentation

The permittee shall periodically calibrate and perform maintenance procedures on all monitoring instrumentation at intervals to ensure accuracy of measurements.

4. Recording Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information: 1) the exact place, date, and time of measurement or sampling; 2) the person(s) who performed the measurement or sample collection; 3) the dates the analyses were performed; 4) the person(s) who performed the analyses; 5) the analytical techniques or methods used; 6) the date of and person responsible for equipment calibration; and 7) the results of all required analyses.

5. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Regional Administrator or the Department.

PART II

Section C. Reporting Requirements

1. Start-Up Notification

If the permittee will not discharge during the first 60 days following the effective date of this permit, the permittee shall notify the Department within 14 days following the effective date of this permit, and then 60 days prior to the commencement of the discharge.

2. Submittal Requirements for Self-Monitoring Data

Part 31 of the NREPA (specifically Section 324.3110(7)); and R 323.2155(2) of Part 21, Wastewater Discharge Permits, promulgated under Part 31 of the NREPA, allow the Department to specify the forms to be utilized for reporting the required self-monitoring data. Unless instructed on the effluent limitations page to conduct "Retained Self-Monitoring," the permittee shall submit self-monitoring data via the Department's MiWaters system.

The permittee shall utilize the information provided on the MiWaters website, located at <https://miwaters.deq.state.mi.us>, to access and submit the electronic forms. Both monthly summary and daily data shall be submitted to the Department no later than the 20th day of the month following each month of the authorized discharge period(s). The permittee may be allowed to submit the electronic forms after this date if the Department has granted an extension to the submittal date.

3. Retained Self-Monitoring Requirements

If instructed on the effluent limits page (or otherwise authorized by the Department in accordance with the provisions of this permit) to conduct retained self-monitoring, the permittee shall maintain a year-to-date log of retained self-monitoring results and, upon request, provide such log for inspection to the staff of the Department. Retained self-monitoring results are public information and shall be promptly provided to the public upon request.

The permittee shall certify, in writing, to the Department, on or before January 10th (April 1st for animal feeding operation facilities) of each year, that: 1) all retained self-monitoring requirements have been complied with and a year-to-date log has been maintained; and 2) the application on which this permit is based still accurately describes the discharge. With this annual certification, the permittee shall submit a summary of the previous year's monitoring data. The summary shall include maximum values for samples to be reported as daily maximums and/or monthly maximums and minimum values for any daily minimum samples.

Retained self-monitoring may be denied to a permittee by notification in writing from the Department. In such cases, the permittee shall submit self-monitoring data in accordance with Part II.C.2., above. Such a denial may be rescinded by the Department upon written notification to the permittee. Reissuance or modification of this permit or reissuance or modification of an individual permittee's authorization to discharge shall not affect previous approval or denial for retained self-monitoring unless the Department provides notification in writing to the permittee.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report. Such increased frequency shall also be indicated.

Monitoring required pursuant to Part 41 of the NREPA or Rule 35 of the Mobile Home Park Commission Act, 1987 PA 96, as amended, for assurance of proper facility operation, shall be submitted as required by the Department.

PART II

Section C. Reporting Requirements

5. Compliance Dates Notification

Within 14 days of every compliance date specified in this permit, the permittee shall submit a *written* notification to the Department indicating whether or not the particular requirement was accomplished. If the requirement was not accomplished, the notification shall include an explanation of the failure to accomplish the requirement, actions taken or planned by the permittee to correct the situation, and an estimate of when the requirement will be accomplished. If a written report is required to be submitted by a specified date and the permittee accomplishes this, a separate written notification is not required.

6. Noncompliance Notification

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

- a. **24-Hour Reporting**
Any noncompliance which may endanger health or the environment (including maximum and/or minimum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.
- b. **Other Reporting**
The permittee shall report, in writing, all other instances of noncompliance not described in a. above at the time monitoring reports are submitted; or, in the case of retained self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

Written reporting shall include: 1) a description of the discharge and cause of noncompliance; and 2) the period of noncompliance, including exact dates and times, or, if not yet corrected, the anticipated time the noncompliance is expected to continue, and the steps taken to reduce, eliminate and prevent recurrence of the noncomplying discharge.

7. Spill Notification

The permittee shall immediately report any release of any polluting material which occurs to the surface waters or groundwaters of the state, unless the permittee has determined that the release is not in excess of the threshold reporting quantities specified in the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code), by calling the Department at the number indicated on the second page of this permit (or, if this is a general permit, on the COC); or, if the notice is provided after regular working hours, call the Department's 24-hour Pollution Emergency Alerting System telephone number, 1-800-292-4706 (calls from out-of-state call 1-517-373-7660).

Within ten (10) days of the release, the permittee shall submit to the Department a full written explanation as to the cause of the release, the discovery of the release, response (clean-up and/or recovery) measures taken, and preventive measures taken or a schedule for completion of measures to be taken to prevent reoccurrence of similar releases.

PART II**Section C. Reporting Requirements****8. Upset Noncompliance Notification**

If a process "upset" (defined as an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee) has occurred, the permittee who wishes to establish the affirmative defense of upset shall notify the Department by telephone within 24 hours of becoming aware of such conditions; and within five (5) days, provide in writing, the following information:

- a. that an upset occurred and that the permittee can identify the specific cause(s) of the upset;
- b. that the permitted wastewater treatment facility was, at the time, being properly operated and maintained (note that an upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation); and
- c. that the permittee has specified and taken action on all responsible steps to minimize or correct any adverse impact in the environment resulting from noncompliance with this permit.

No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

In any enforcement proceedings, the permittee, seeking to establish the occurrence of an upset, has the burden of proof.

9. Bypass Prohibition and Notification

- a. **Bypass Prohibition**
Bypass is prohibited, and the Department may take an enforcement action, unless:
 - 1) bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - 2) there were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass; and
 - 3) the permittee submitted notices as required under 9.b. or 9.c. below.
- b. **Notice of Anticipated Bypass**
If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least ten (10) days before the date of the bypass, and provide information about the anticipated bypass as required by the Department. The Department may approve an anticipated bypass, after considering its adverse effects, if it will meet the three (3) conditions listed in 9.a. above.
- c. **Notice of Unanticipated Bypass**
The permittee shall submit notice to the Department of an unanticipated bypass by calling the Department at the number indicated on the second page of this permit (if the notice is provided after regular working hours, call: 1-800-292-4706) as soon as possible, but no later than 24 hours from the time the permittee becomes aware of the circumstances.

PART II

Section C. Reporting Requirements

d. **Written Report of Bypass**

A written submission shall be provided within five (5) working days of commencing any bypass to the Department, and at additional times as directed by the Department. The written submission shall contain a description of the bypass and its cause; the period of bypass, including exact dates and times, and if the bypass has not been corrected, the anticipated time it is expected to continue; steps taken or planned to reduce, eliminate, and prevent reoccurrence of the bypass; and other information as required by the Department.

e. **Bypass Not Exceeding Limitations**

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions of 9.a., 9.b., 9.c., and 9.d., above. This provision does not relieve the permittee of any notification responsibilities under Part II.C.11. of this permit.

f. **Definitions**

- 1) **Bypass** means the intentional diversion of waste streams from any portion of a treatment facility.
- 2) **Severe property damage** means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

10. Bioaccumulative Chemicals of Concern (BCC)

Consistent with the requirements of R 323.1098 and R 323.1215 of the Michigan Administrative Code, the permittee is prohibited from undertaking any action that would result in a lowering of water quality from an increased loading of a BCC unless an increased use request and antidegradation demonstration have been submitted and approved by the Department.

11. Notification of Changes in Discharge

The permittee shall notify the Department, in writing, as soon as possible but no later than 10 days of knowing, or having reason to believe, that any activity or change has occurred or will occur which would result in the discharge of: 1) detectable levels of chemicals on the current Michigan Critical Materials Register, priority pollutants or hazardous substances set forth in 40 CFR 122.21, Appendix D, or the Pollutants of Initial Focus in the Great Lakes Water Quality Initiative specified in 40 CFR 132.6, Table 6, which were not acknowledged in the application or listed in the application at less than detectable levels; 2) detectable levels of any other chemical not listed in the application or listed at less than detection, for which the application specifically requested information; or 3) any chemical at levels greater than five times the average level reported in the complete application (see the first page of this permit, for the date(s) the complete application was submitted). Any other monitoring results obtained as a requirement of this permit shall be reported in accordance with the compliance schedules.

PART II

Section C. Reporting Requirements

12. Changes in Facility Operations

Any anticipated action or activity, including but not limited to facility expansion, production increases, or process modification, which will result in new or increased loadings of pollutants to the receiving waters must be reported to the Department by a) submission of an increased use request (application) and all information required under R 323.1098 (Antidegradation) of the Water Quality Standards or b) by notice if the following conditions are met: 1) the action or activity will not result in a change in the types of wastewater discharged or result in a greater quantity of wastewater than currently authorized by this permit; 2) the action or activity will not result in violations of the effluent limitations specified in this permit; 3) the action or activity is not prohibited by the requirements of Part II.C.10.; and 4) the action or activity will not require notification pursuant to Part II.C.11. Following such notice, the permit or, if applicable, the facility's COC may be modified according to applicable laws and rules to specify and limit any pollutant not previously limited.

13. Transfer of Ownership or Control

In the event of any change in control or ownership of facilities from which the authorized discharge emanates, the permittee shall submit to the Department 30 days prior to the actual transfer of ownership or control a written agreement between the current permittee and the new permittee containing: 1) the legal name and address of the new owner; 2) a specific date for the effective transfer of permit responsibility, coverage and liability; and 3) a certification of the continuity of or any changes in operations, wastewater discharge, or wastewater treatment.

If the new permittee is proposing changes in operations, wastewater discharge, or wastewater treatment, the Department may propose modification of this permit in accordance with applicable laws and rules.

14. Operations and Maintenance Manual

For wastewater treatment facilities that serve the public (and are thus subject to Part 41 of the NREPA), Section 4104 of Part 41 and associated Rule 2957 of the Michigan Administrative Code allow the Department to require an Operations and Maintenance (O&M) Manual from the facility. An up-to-date copy of the O&M Manual shall be kept at the facility and shall be provided to the Department upon request. The Department may review the O&M Manual in whole or in part at its discretion and require modifications to it if portions are determined to be inadequate.

At a minimum, the O&M Manual shall include the following information: permit standards; descriptions and operation information for all equipment; staffing information; laboratory requirements; record keeping requirements; a maintenance plan for equipment; an emergency operating plan; safety program information; and copies of all pertinent forms, as-built plans, and manufacturer's manuals.

Certification of the existence and accuracy of the O&M Manual shall be submitted to the Department at least sixty days prior to start-up of a new wastewater treatment facility. Recertification shall be submitted sixty days prior to start-up of any substantial improvements or modifications made to an existing wastewater treatment facility.

PART II**Section C. Reporting Requirements****15. Signatory Requirements**

All applications, reports, or information submitted to the Department in accordance with the conditions of this permit and that require a signature shall be signed and certified as described in the Clean Water Act and the NREPA.

The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance, shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

The NREPA (Section 3115(2)) provides that a person who at the time of the violation knew or should have known that he or she discharged a substance contrary to this part, or contrary to a permit, COC, or order issued or rule promulgated under this part, or who intentionally makes a false statement, representation, or certification in an application for or form pertaining to a permit or COC or in a notice or report required by the terms and conditions of an issued permit or COC, or who intentionally renders inaccurate a monitoring device or record required to be maintained by the Department, is guilty of a felony and shall be fined not less than \$2,500.00 or more than \$25,000.00 for each violation. The court may impose an additional fine of not more than \$25,000.00 for each day during which the unlawful discharge occurred. If the conviction is for a violation committed after a first conviction of the person under this subsection, the court shall impose a fine of not less than \$25,000.00 per day and not more than \$50,000.00 per day of violation. Upon conviction, in addition to a fine, the court in its discretion may sentence the defendant to imprisonment for not more than 2 years or impose probation upon a person for a violation of this part. With the exception of the issuance of criminal complaints, issuance of warrants, and the holding of an arraignment, the circuit court for the county in which the violation occurred has exclusive jurisdiction. However, the person shall not be subject to the penalties of this subsection if the discharge of the effluent is in conformance with and obedient to a rule, order, permit, or COC of the Department. In addition to a fine, the attorney general may file a civil suit in a court of competent jurisdiction to recover the full value of the injuries done to the natural resources of the state and the costs of surveillance and enforcement by the state resulting from the violation.

16. Electronic Reporting

Upon notice by the Department that electronic reporting tools are available for specific reports or notifications, the permittee shall submit electronically all such reports or notifications as required by this permit, on forms provided by the Department.

PART II

Section D. Management Responsibilities

1. Duty to Comply

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit, more frequently than, or at a level in excess of, that authorized, shall constitute a violation of the permit.

It is the duty of the permittee to comply with all the terms and conditions of this permit. Any noncompliance with the Effluent Limitations, Special Conditions, or terms of this permit constitutes a violation of the NREPA and/or the Clean Water Act and constitutes grounds for enforcement action; for permit or Certificate of Coverage (COC) termination, revocation and reissuance, or modification; or denial of an application for permit or COC renewal.

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

2. Operator Certification

The permittee shall have the waste treatment facilities under direct supervision of an operator certified at the appropriate level for the facility certification by the Department, as required by Sections 3110 and 4104 of the NREPA. Permittees authorized to discharge storm water shall have the storm water treatment and/or control measures under direct supervision of a storm water operator certified by the Department, as required by Section 3110 of the NREPA.

3. Facilities Operation

The permittee shall, at all times, properly operate and maintain all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures.

4. Power Failures

In order to maintain compliance with the effluent limitations of this permit and prevent unauthorized discharges, the permittee shall either:

- a. provide an alternative power source sufficient to operate facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit; or
- b. upon the reduction, loss, or failure of one or more of the primary sources of power to facilities utilized by the permittee to maintain compliance with the effluent limitations and conditions of this permit, the permittee shall halt, reduce or otherwise control production and/or all discharge in order to maintain compliance with the effluent limitations and conditions of this permit.

5. Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any adverse impact to the surface waters or groundwaters of the state resulting from noncompliance with any effluent limitation specified in this permit including, but not limited to, such accelerated or additional monitoring as necessary to determine the nature and impact of the discharge in noncompliance.

PART II

Section D. Management Responsibilities

6. Containment Facilities

The permittee shall provide facilities for containment of any accidental losses of polluting materials in accordance with the requirements of the Part 5 Rules (R 324.2001 through R 324.2009 of the Michigan Administrative Code). For a POTW, these facilities shall be approved under Part 41 of the NREPA.

7. Waste Treatment Residues

Residuals (i.e. solids, sludges, biosolids, filter backwash, scrubber water, ash, grit, or other pollutants or wastes) removed from or resulting from treatment or control of wastewaters, including those that are generated during treatment or left over after treatment or control has ceased, shall be disposed of in an environmentally compatible manner and according to applicable laws and rules. These laws may include, but are not limited to, the NREPA, Part 31 for protection of water resources, Part 55 for air pollution control, Part 111 for hazardous waste management, Part 115 for solid waste management, Part 121 for liquid industrial wastes, Part 301 for protection of inland lakes and streams, and Part 303 for wetlands protection. Such disposal shall not result in any unlawful pollution of the air, surface waters or groundwaters of the state.

8. Right of Entry

The permittee shall allow the Department, any agent appointed by the Department, or the Regional Administrator, upon the presentation of credentials and, for animal feeding operation facilities, following appropriate biosecurity protocols:

- a. to enter upon the permittee's premises where an effluent source is located or any place in which records are required to be kept under the terms and conditions of this permit; and
- b. at reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit; to inspect process facilities, treatment works, monitoring methods and equipment regulated or required under this permit; and to sample any discharge of pollutants.

9. Availability of Reports

Except for data determined to be confidential under Section 308 of the Clean Water Act and Rule 2128 (R 323.2128 of the Michigan Administrative Code), all reports prepared in accordance with the terms of this permit, shall be available for public inspection at the offices of the Department and the Regional Administrator. As required by the Clean Water Act, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Clean Water Act and Sections 3112, 3115, 4106 and 4110 of the NREPA.

10. Duty to Provide Information

The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or the facility's COC, or to determine compliance with this permit. The permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

PART II

Section E. Activities Not Authorized by This Permit

1. Discharge to the Groundwaters

This permit does not authorize any discharge to the groundwaters. Such discharge may be authorized by a groundwater discharge permit issued pursuant to the NREPA.

2. POTW Construction

This permit does not authorize or approve the construction or modification of any physical structures or facilities at a POTW. Approval for the construction or modification of any physical structures or facilities at a POTW shall be by permit issued under Part 41 of the NREPA.

3. Civil and Criminal Liability

Except as provided in permit conditions on "Bypass" (Part II.C.9. pursuant to 40 CFR 122.41(m)), nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond the permittee's control, such as accidents, equipment breakdowns, or labor disputes.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee may be subject under Section 311 of the Clean Water Act except as are exempted by federal regulations.

5. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act.

6. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize violation of any federal, state or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other Department of Environment, Great Lakes, and Energy permits, or approvals from other units of government as may be required by law.

Memo

TO: Ben Swayze – Cascade Charter Township
FROM: Michael L. Berrevoets, PE
DATE: October 28, 2021 **PROJECT NO.:** 04058
RE: Cascade Charter Township Stormwater Ordinance

This memo is provided to outline the major changes with the new Stormwater Ordinance (SWO) that is being considered for adoption by the Township Board. The SWO has been developed as a model ordinance in cooperation with other local governments in the Lower Grand River Watershed. Adoption of the ordinance is required to maintain compliance with the Township's NPDES MS4 permit.

The SWO includes many new record keeping requirements, additional required oversight by the Township, and design standards for new developments.

Major Changes and Requirements

1. Stormwater Permit will be required for all new developments. The developer will be required to include the following in their permit application:
 - a. Site Drainage Plan
 - b. Deposit for the stormwater permit review fee.
 - c. Post an applicable performance guarantee (Note, amount must be established in Section 2.06.2)
 - d. Provide all easements necessary to implement the approved drainage plan.
 - e. Provide the required maintenance agreement for routine, emergency, and long-term maintenance. This agreement shall be recorded and is binding on all future property owners.
2. Inspection, Monitoring, Reporting and Recordkeeping
 - a. The Township may inspect and/or obtain stormwater samples to determine compliance with the ordinance requirements.
 - b. The new SWO still requires that any discharger who accidentally discharges into a water body any substance other than stormwater or an exempted discharge shall immediately inform the Township.
3. Enforcement
 - a. The Township is required to establish dollar amounts (fines) for municipal civil infractions in Section 6.01.1 for violating any provisions of the ordinance. This is not a new requirement, however it is an opportunity to review fine amounts with adoption of the new ordinance.
 - b. Township is authorized to issue a Stop Work Order where there is work that results in a violation of the ordinance.

- c. Township may complete the project if the owner fails to comply with the ordinance and the Owner shall be obligated to reimburse the Township. This can only be done after giving reasonable notice and an opportunity for compliance.
4. Maintenance Agreement is required
 - a. The Developer shall provide all stormwater maintenance agreements necessary to implement the approved drainage plan.
 - b. The agreement shall include a maintenance plan and schedule for long-term maintenance.
 - c. Maintenance plan must include a detailed annual estimated budget for the initial three years.
 - d. If there is a failure to undertake the required maintenance, the Township is authorized, but not required, to hire an entity to undertake the monitoring or maintenance. The property owner shall be obligated to reimburse the Township for associated costs.
 5. Performance and Design Standards

The new ordinance also includes revised performance and design standards that developers will need to incorporate in their site plans for review prior to issuing the storm water permit. The cause for the change is due to increasing stormwater requirements set forth by the State (EGLE). These standards look similar to current standards; however, they are much more restrictive especially with respect to water quality treatment and channel protection requirements. These standards are very similar across communities in the Lower Grand River Watershed with the exception of a few additional requirements that are unique to the Township.

The SWO references the Township "Stormwater Standards Manual" (SSM) which further outlines the specifics of how the SWO will be applied when developers are preparing site plans. The SSM is a 143-page document that contains Best Management Practices (BMPs) and detailed information necessary to meet the SWO requirements.

- a. Water Quality Treatment
 - All sites are required to provide water quality treatment for the entire project site. This requires treatment of the calculated site runoff for the entire project site from the 90 percent annual non-exceedance storm, which is approximately equal to 1-inch of rain. This volume of runoff is commonly referred to as the "first flush" that typically contains the majority of pollutants. This standard requires a minimum of 80% removal of Total Suspended Solids (TSS). Developers will have the option to select approved BMPs to satisfy the Water Quality Treatment requirement. These BMPs can include settling (in a permanent pool or detention), filtration, infiltration, absorption, or chemical/mechanical treatment.
- b. Channel Protection
 - The SWO requires that post-development project site runoff volume and peak flow rate be at or below predevelopment levels for all storms up to the 2-year, 24-hour event. In general, these rate storms have been found to result in the most downstream erosion and this requirement is necessary to mitigate that erosion.
 - This standard requires onsite retention of the volume increase. Retention can be provided through infiltration, or interception and evapotranspiration or reuse.
 - This requirement may be difficult to achieve depending on existing site conditions that have poor draining soils, bedrock, high groundwater or located in stormwater hot spots. In those cases, the

SWO allows for an Alternative Approach which is extended detention of the 2-year, 24-hour event. This involves providing detention of the runoff for not less than 24 hours or more than 72 hours effectively reducing the peak flow to minimize the downstream impacts. There are very specific conditions where the Alternative Approach will be allowed.

- There is also a unique requirement for Channel Protection in the Cascade SSM. When the SWO and SSM were being developed it was decided that redevelopment of existing developed parcels presented an opportunity for additional improvements in subwatersheds with impaired water courses. The SSM contains a provision where development and redevelopment in critical subwatersheds shall meet presettlement conditions for channel protection.

c. Flood Control

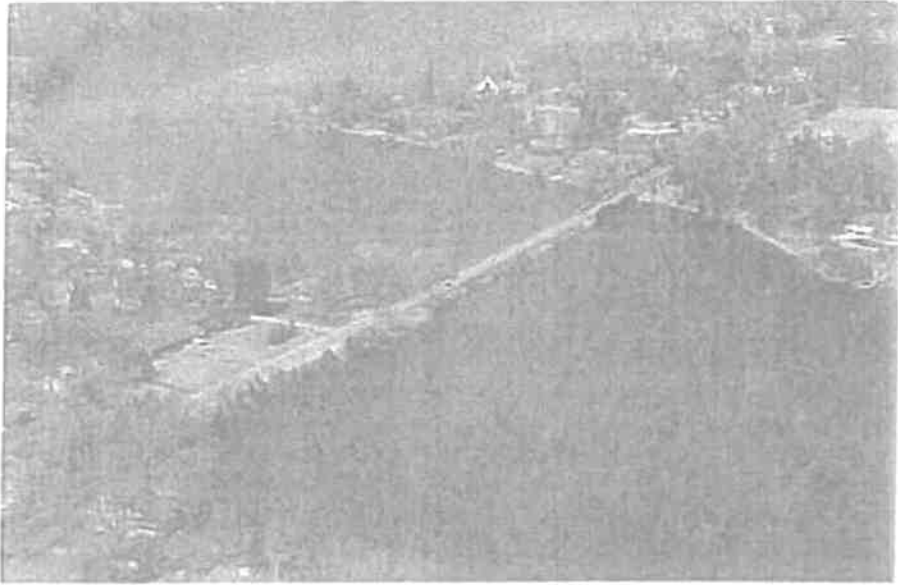
- The SWO also includes requirements for flood control which is the concern with larger or more intense rain events. This requirement is similar to the current ordinance with the Flood Control Zone Map still being used; however, there have been some increased requirements in some areas. The flood control requirements are dependent on the location of the development.
- Development in Zone 1 requires retention of the 100-year storm event if the permeability of the soil exceeds 3-inches per hour and the highest groundwater level is more than 3 feet below the proposed basin bottom. If those conditions are not met, then detention is required for the 100-year storm event with a restricted release rate of 0.13 cubic feet per second per acre of development. The current ordinance only required detention of the 25-year storm event if infiltration was not possible due to soil or groundwater conditions.
- Development in Zone 2 requires detention of the 25-year storm event with a maximum release rate of 0.13 cubic feet per second per acre developed.
- Development in Zone 3 does not require flood control provided there is a suitable outlet for the 100-year storm runoff to the open water of the river. It should be noted that Zone 3 is generally limited to parcels along either the Thornapple River or Grand River. If there is not a suitable outlet for the 100-year storm then the developer will need to comply with Zone 2 requirements. It is the Developer's responsibility to prove there is a suitable outlet.
- In all zones, the overflow route and extent of high-water levels for the 100-year flood shall be identified for the site and for the downstream areas between the site and the nearest acceptable floodway or outlet.

d. There are also additional performance and design standards which are site-specific requirements.

- Pretreatment of site runoff is required on a site-specific basis prior to discharging to certain stormwater BMPs.
- The SWO and SSM also contain requirements on how to handle "Hot Spots" which have a potential greater risk of polluted runoff than a typical site. These uses would include sites such as gas stations, commercial vehicle maintenance, auto recyclers, recycling centers, and scrap yards. There are special requirements for these types of uses to protect groundwater or nearby surface waters.

Copy Brian Hilbrands

**Storm Water Ordinance
for
Cascade Charter Township
Kent County, Michigan**



**STORM WATER ORDINANCE
FOR
CASCADE CHARTER TOWNSHIP
KENT COUNTY, MICHIGAN**

CONTENTS

	<u>Page</u>
Article I - General	4
1.01 Statutory Authority and Title	4
1.02 Findings	4
1.03 Purpose	5
1.04 Applicability, Exemptions and General Provisions	6
1.05 Definitions	7
Article II – Storm Water Permits	12
2.01 Permit Required.	12
2.02 Storm Water Permit Review Procedures	12
2.03 Drainage Plan.....	13
2.04 Storm Water Permit Review Fees.....	14
2.05 Construction Site Runoff Controls	15
2.06 Financial Guarantee.....	15
2.07 Certificate of Occupancy.....	15
2.08 No Change in Approved Facilities.....	15
2.09 Terms and Conditions of Permits.....	16
Article III – Storm Water System, Floodplain Standards, Soil Erosion	17
3.01 Management of and Responsibility for Storm Water System	17
3.02 Storm Water System	17
3.03 Storm Water Discharge Rates and Volumes	17
3.04 Floodplain Standards	17
3.05 Soil Erosion and Sedimentation Control.....	18
3.06 Building Openings	19
3.07 Sump Pump Discharge	19
3.08 Public Health, Safety and Welfare.....	20
Article IV – Prohibitions and Exemptions	21
4.01 Prohibited Discharges	21
4.02 Exempted Discharges	21
4.03 Interference with Natural or Artificial Drains	21
4.04 Storage of Hazardous or Toxic Materials in Drainageway.....	22
Article V – Inspection, Monitoring, Reporting, and Record Keeping	23
5.01 Inspection and Sampling.....	23
5.02 Storm Water Monitoring Facilities	23
5.03 Accidental Discharges	23
5.04 Record Keeping Requirement.....	24
Article VI – Enforcement	25

6.01 Sanctions for Violation	25
6.02 Stop Work Order.....	25
6.03 Failure to Comply; Completion	26
6.04 Emergency Measures	26
6.05 Cost Recovery for Damage to Storm Drain System	26
6.06 Collection of Costs; Lien	26
6.07 Appeals	26
Article VII – Storm Water Easements and Maintenance Agreements	28
7.01 Applicability of Requirements	28
7.02 Storm Water Management Easements.....	28
7.03 Maintenance Agreements.....	28
7.04 Establishment of County Drains.....	28
Article VIII – Performance and Design Standards	29
8.01 Performance Standards.....	29
8.02 Design Standards	30
8.03 Resolution to Implement Performance and Design Standards	30
Article IX – Other Matters.....	31
9.01 Interpretation	31
9.02 Catch-Line Headings	31
9.03 Severability.....	31
9.04 Other Ordinances	31
9.05 Effective Date	31
9.06 Ordinance Adoption.....	32

**Cascade Charter Township
Kent County, Michigan
Ordinance 7 of 2002
As amended by Ord no 2 of 2008; 5/14/2008**

AN ORDINANCE to provide for the regulation and control of storm water runoff; to provide for storm water permits and the procedures and standards for the issuance thereof; to provide for payment or reimbursement of costs and expenses incurred by Cascade Charter Township associated with storm water permits and the consideration thereof; to establish standards and requirements for the protection of floodways and for the control of soil erosion and sedimentation; to adopt other provisions for the establishing, maintaining and protection of drains and drainageways; to provide regulations for the inspection, sampling and monitoring of storm water and other discharges; to establish performance and design standards for storm water management in specified zones of Cascade Charter Township; and to provide penalties for violations of the ordinance.

THE BOARD OF CASCADE CHARTER TOWNSHIP ORDAINS:

Article I - General

Sec. 1.01 Statutory Authority and Title

This ordinance is adopted in accordance with the Charter Township Act, as amended, being MCL 42.1, et seq.; the Township and Village Public Improvement Act, as amended, being MCL 41.721, et seq.; the Drain Code of 1956, as amended, being MCL 280.1, et seq.; the Land Division Act, as amended, being MCL 560.1, et seq.; the Revenue Bond Act, as amended, being MCL 141.101, et seq.; and the Natural Resources and Environmental Protection Act, as amended, being MCL 324.101, et seq.; Section 401(p) of the Federal Water Pollution Control Act (also known as the Clean Water Act), as amended, being 33 USC 1342(p) and 40 CFR Parts 9, 122, 123 and 124; and other applicable state and federal laws.

This ordinance shall be known and may be cited as the Cascade Charter Township Storm Water Ordinance.

Sec. 1.02 Findings

The Cascade Charter Township finds that:

- (1) Water bodies, roadways, structures, and other property within, and downstream of the Township are at times subjected to flooding;
- (2) Flooding is a danger to the lives and property of the public and is also a danger to the natural resources of the Township and the region;
- (3) Land development alters the hydrologic response of watersheds, resulting in increased storm water runoff rates and volumes, increased flooding,

increased stream channel erosion, and increased sediment transport and deposition;

- (4) Storm water runoff produced by land development contributes to increased quantities of water-borne pollutants;
- (5) Increases of storm water runoff, soil erosion, and non-point source pollution have occurred as a result of land development, and cause deterioration of the water resources of the Township and downstream municipalities;
- (6) Storm water runoff, soil erosion, and non-point source pollution, due to land development within the Township, have resulted in a deterioration of the water resources of the Township and downstream municipalities;
- (7) Increased storm water runoff rates and volumes, and the sediments and pollutants associated with storm water runoff from future development projects within the Township will, absent reasonable regulation and control, adversely affect the Township's water bodies and water resources, and those of downstream municipalities;
- (8) Storm water runoff, soil erosion, and non-point source pollution can be controlled and minimized by the regulation of storm water runoff from development;
- (9) Adopting the standards, criteria and procedures contained in this ordinance and implementing the same will address many of the deleterious effects of storm water runoff;
- (10) Adopting these standards is necessary for the preservation of the public health, safety and welfare.

Sec. 1.03 Purpose

It is the purpose of this ordinance to establish minimum storm water management requirements and controls to accomplish, among others, the following objectives:

- (1) To reduce artificially induced flood damage;
- (2) To minimize increased storm water runoff rates and volumes from identified new land development;
- (3) To minimize the deterioration of existing watercourses, culverts and bridges, and other structures;
- (4) To encourage water recharge into the ground where geologically favorable conditions exist;
- (5) To prevent an increase in non-point source pollution;

- (6) To maintain the integrity of stream channels for their biological functions, as well as for drainage and other purposes;
- (7) To minimize the impact of development upon stream bank and streambed stability;
- (8) To reduce erosion from development or construction projects;
- (9) To preserve and protect water supply facilities and water resources by means of controlling increased flood discharges, stream erosion, and runoff pollution; and,
- (10) To reduce storm water runoff rates and volumes, soil erosion, and non-point source pollution, wherever practicable, from lands that were developed without storm water management controls meeting the purposes and standards of this ordinance.
- (11) To reduce the adverse impact of changing land use on water bodies and, to that end, this ordinance establishes minimum standards to protect water bodies from degradation resulting from changing land use where there are insufficient storm water management controls.

Sec. 1.04 Applicability, Exemptions and General Provisions

- (1) This ordinance shall apply to any development site which requires approval of a plat, a site development plan, building permit, or any other permit for work which will alter storm water drainage characteristics of the development site, provided, however, that this ordinance shall not apply to the following:
 - (a) The installation or removal of individual mobile homes within a mobile home park. This exemption shall not be construed to apply to the construction, expansion, or modification of a mobile home park.
 - (b) Farm operations and farm buildings, except dwellings, directly related to farm operations. This exemption shall not apply to livestock production facilities as defined in this ordinance, greenhouses and other similar structures.
 - (c) Plats with final plat approval and other developments with final land use approval before the effective date of this ordinance, where such approvals remain in effect.
 - (d) The construction of, or an addition, extension or modification to, an individual single-family or a two-family detached dwelling.
 - (e) Construction, development or redevelopment associated with aeronautical facilities at the Gerald R. Ford International Airport.

Sec. 1.05 Definitions

For the purpose of this ordinance, the following words and phrases shall have the meanings respectively ascribed to them by this Section unless the context in which they are used specifically indicates otherwise:

- (1) **Aeronautical Facilities** – Any and all devices, physical or otherwise, objects of nature or human-made, which aid and are used in aeronautics.
- (2) **Base Flood** – A flood having a one (1) percent chance of being equaled or exceeded in any given year.
- (3) **Base Flood Elevation** – The high water elevation of the Base Flood, commonly referred to as the "100-year flood elevation".
- (4) **Base Flood Plain** – The area inundated by the Base Flood.
- (5) **Best Management Practices (BMPs)** – A practice, or combination of practices and design criteria that comply with the Michigan Department of Environmental Quality's Guidebook of BMPs for Michigan Watersheds, or equivalent practices and design criteria that accomplish the purposes of this ordinance (including, but not limited to minimizing storm water runoff and preventing the discharge of pollutants into storm water) as determined by the Township Engineer, and, where appropriate, the standards of the Kent County Drain Commissioner.
- (6) **Building Opening** – Any opening of a solid wall such as a window or door, through which floodwaters could penetrate.
- (7) **Clean Water Act** – The Federal Water Pollution Control Act, 33 USC Sec 1251 et seq., as amended, and the applicable regulations promulgated thereunder.
- (8) **Construction Site Storm Water Runoff** – Storm water runoff from a development site following an earth change.
- (9) **Design Engineer** – Registered and licensed professional engineer responsible for the design of a drainage plan.
- (10) **Detention** – A system which is designed to capture storm water and release it over a given period of time through an outlet structure at a controlled rate.
- (11) **Developed or Development** – The installation or construction of impervious surfaces on a development site that require, pursuant to state law or local ordinance, the Township approval of a site plan, plat, site condominium, special land use, planned unit development, rezoning of land, land division approval, private road approval or

other approvals required for the development of land or the erection of buildings or structures.

- (12) **Developer** – Any person proposing or implementing the development of land.
- (13) **Development Site** – Any land that is being or has been developed, or that a developer proposes for development or that is subject to an earth change.
- (14) **Discharger** – Any person or entity who directly or indirectly discharges storm water from any property. Discharger also means any employee, officer, director, partner, contractor, or other person who participates in, or is legally or factually responsible for, any act or omission that is or results in a violation of this ordinance.
- (15) **Drain** – Any drain as defined in the Drain Code of 1956, as amended, being MCL 280.1, et. seq., other than an established county or inter-county drain.
- (16) **Drainage** – The collection, conveyance, or discharge of ground water and/or surface water.
- (17) **Drainageway** – The area within which surface water or ground water is carried from one part of a lot or parcel to another part of the lot or parcel or to adjacent land.
- (18) **Earth Change** – Any human activity that removes ground cover, changes the slope or contours of the land, or exposes the soil surface to the actions of wind and rain. Earth change includes, but is not limited to, any excavating, surface grading, filling, landscaping, or removal of vegetative roots.
- (19) **EPA** – The United States Environmental Protection Agency.
- (20) **Erosion** – The process by which the ground surface is worn away by action of wind, water, gravity or a combination thereof.
- (21) **Exempted Discharges** – Discharges other than storm water as specified in Section 4.02 of this ordinance.
- (22) **Federal Emergency Management Agency (FEMA)** – The agency of the federal government charged with emergency management.
- (23) **Flood or Flooding** – A general and temporary condition of partial or complete inundation of normally dry land areas resulting from the overflow of water bodies or the unusual and rapid accumulation of surface water runoff from any source.
- (24) **Floodplain** – Any land area subject to periodic flooding.

- (25) **Flood-Proofing** – Any structural and/or non-structural additions, changes, or adjustments to structures or property that reduce or eliminate flood damage to land, or improvements utilities and structures.
- (26) **Flood Protection Elevation (FPE)** – The Base Flood Elevation plus one (1) foot at any given location.
- (27) **Floodway** – The channel of any watercourse and the adjacent land areas that must be reserved to carry and discharge a base flood without cumulatively increasing the water surface elevation more than one-tenth (1/10) of a foot due to the loss of flood conveyance or storage.
- (28) **Grading** – Any stripping, excavating, filling, and stockpiling of soil or any combination thereof and the land in its excavated or filled condition.
- (29) **Illicit Connection** – Any method or means for conveying an illicit discharge into water bodies or the Township's storm water system.
- (30) **Illicit Discharge** – Any discharge to water bodies that does not consist entirely of storm water, discharges pursuant to the terms of an NPDES permit, or exempted discharges as defined in this ordinance.
- (31) **Impervious Surface** – Surface that does not allow storm water runoff to slowly percolate into the ground.
- (32) **KCDC** – Kent County Drain Commissioner.
- (33) **Livestock Production Facilities** – An agricultural activity in which 100 or more livestock are fed, bred and/or raised within a confined area, other than an open pasture either inside or outside an enclosed building.
- (34) **Lowest Floor** – The lowest floor or the lowest enclosed area (including basement), but not including an unfinished or flood-resistant enclosure which is usable solely for parking of vehicles or building access.
- (35) **MDEQ** – Michigan Department of Environmental Quality.
- (36) **NPDES** – National Pollution Discharge Elimination System.
- (37) **Overland flow-way** – Surface area that conveys a concentrated flow of storm water runoff.

- (38) **Person** – An individual, firm, partnership, association, public or private corporation, public agency, instrumentality, or any other legal entity.
- (39) **Plan** – Written narratives, specifications, drawings, sketches, written standards, operating procedures, or any combination of these which contain information pursuant to this ordinance.
- (40) **Pollutant** – A substance discharged which includes, but is not limited to the following: any dredged spoil, solid waste, vehicle fluids, yard wastes, animal wastes, agricultural waste products, sediment, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological wastes, radioactive materials, heat, wrecked or discharged equipment, rock, sand, cellar dirt, and industrial, municipal, commercial and agricultural waste, or any other contaminant or other substance defined as a pollutant under the Clean Water Act.
- (41) **Property Owner** – Any person having legal or equitable title to property or any person having or exercising care, custody, or control over any property.
- (42) **Retention** – A system that is designed to capture storm water and contain it until it infiltrates the soil or evaporates.
- (43) **Soil Erosion** – The stripping of soil and weathered rock from land creating sediment for transportation by water, wind or ice, and enabling formation of new sedimentary deposits.
- (44) **State of Michigan Water Quality Standards** – All applicable State rules, regulations, and laws pertaining to water quality, including the provisions of Section 3106 of Part 31 of 1994 PA 451, as amended.
- (45) **Storm Drain** – A system of open or enclosed conduits and appurtenant structures intended to convey or manage storm water runoff, ground water and drainage.
- (46) **Storm Water Permit** – A permit issued pursuant to this ordinance.
- (47) **Storm Water Runoff** – The runoff and drainage of precipitation resulting from rainfall or snowmelt or other natural event or process.
- (48) **Storm Water Runoff Facility** – The method, structure, area, system, or other equipment or measures which are designed to receive, control, store, or convey storm water.
- (49) **Stream** – A river, stream or creek which may or may not be serving as a drain, or any other water body that has definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water.

- (50) Township – Cascade Charter Township.
- (51) Water Body – A river, lake, stream, creek or other watercourse or wetlands.
- (52) Watershed – A region draining into a water body.
- (53) Wetlands – Land characterized by the presence of water at a frequency and duration sufficient to support wetland vegetation or aquatic life.

Article II – Storm Water Permits

Sec. 2.01 Permit Required.

- (1) A developer shall not engage in any development without first receiving a storm water permit from the Township pursuant to Section 2.02.
- (2) The granting of a storm water permit shall authorize only such development for which the permit is required, subject to the terms of the permit, and it shall not be deemed to approve other development or other land use activities.

Sec. 2.02 Storm Water Permit Review Procedures (As amended by Ord no 2 of 2008; 5/14/2008)

The Township shall grant a storm water permit, which may impose terms and conditions in accordance with Section 2.09, and which shall be granted only upon compliance with each of the following requirements:

- (1) The developer has submitted a drainage plan complying with Section 2.03.
- (2) The drainage plan contains a description of an adequate, temporary storm water retention system to prevent construction site storm water runoff, satisfying the requirements of Section 2.05, and the developer has obtained a soil erosion permit, if necessary.
- (3) The developer provides a permanent on-site storm water system meeting the requirements of sections 8.01 and 8.02
- (4) The developer has paid or deposited the storm water permit review fee pursuant to Section 2.04.
- (5) The developer has paid or posted the applicable financial guarantee pursuant to Section 2.06.
- (6) The developer provides all easements necessary to implement the approved drainage plan and to otherwise comply with this Ordinance including, but not limited to, Section 7.02. All easements shall be acceptable to the Township in

form and substance and shall be recorded with the Kent County Register of Deeds.

- (7) The drainage plan is designed in conformity with the Township's design and performance standards for drains and storm water management systems, as set forth in Article VIII.
- (8) All storm water runoff facilities shall be designed in accordance with the then-current BMPs.
- (9) The developer provides the required maintenance agreement for routine, emergency, and long-term maintenance of all storm water runoff facilities and in compliance with the approved drainage plan and this Ordinance including, but not limited to, Section 7.03. The maintenance agreement shall be acceptable to the Township in form and substance and shall be recorded with the Kent County Register of Deeds.

Sec. 2.03 Drainage Plan.

The developer shall provide a drainage plan to the Township for review and approval by the Township. The drainage plan shall identify and contain all of the following:

- (1) The location of the development site and water bodies that will receive storm water runoff.
- (2) The existing and proposed topography of the development site, including the alignment and boundary of the natural drainage courses, with contours having a maximum interval of one foot (using USGS datum). The information shall be superimposed on the pertinent Kent County soil map.
- (3) The development tributary area to each point of discharge from the development.
- (4) Calculations for the final peak discharge rates.
- (5) Calculations for any facility or structure size and configuration.
- (6) A drawing showing all proposed storm water runoff facilities with existing and final grades.
- (7) The sizes and locations of upstream and downstream culverts serving the major drainage routes flowing into and out of the development site. Any significant off-site and on-site drainage outlet restrictions other than culverts should be noted on the drainage map.
- (8) An implementation plan for construction and inspection of all storm water runoff facilities necessary to the overall drainage plan, including a schedule of the estimated dates of completing construction of the storm water runoff facilities shown on the plan and an identification of the proposed inspection

procedures to ensure that the storm water runoff facilities are constructed in accordance with the approved drainage plan.

- (9) A plan to ensure the effective control of construction site storm water runoff and sediment track-out onto roadways.
- (10) Drawings, profiles, and specifications for the construction of the storm water runoff facilities reasonably necessary to ensure that storm water runoff will be drained, stored, or otherwise controlled in accordance with this ordinance.
- (11) A maintenance agreement, in form and substance acceptable to the Township, for ensuring maintenance of any privately owned storm water runoff facilities. The maintenance agreement shall include the developer's written commitment to provide routine, emergency, and long-term maintenance of the facilities and, in the event that the facilities are not maintained in accordance with the approved drainage plan, the agreement shall authorize the Township to maintain any on-site storm water runoff facility as reasonably necessary, at the developer's expense.
- (12) The name of the engineering firm and the registered professional engineer that designed the drainage plan and that will inspect final construction of the storm water runoff facilities.
- (13) All design information must be compatible for conversion to Grand Valley Regional Geographic Information System (REGIS).
- (14) Any other information necessary for the Township to verify that the drainage plan complies with the Township's design and performance standards for drains and storm water management systems.

Sec. 2.04 Storm Water Permit Review Fees.

- (1) At the time of filing an application for a storm water permit, fees shall be paid to the Township in accordance with the fee schedule as received and adopted by resolution of the Cascade Charter Township Board of Trustees.

Sec. 2.05 Construction Site Runoff Controls

Before making any earth change on a development site regulated by this ordinance, the developer shall first obtain a soil erosion permit issued in accordance with Part 91 of Act No. 451 of the Public Acts of 1994, as amended, if one is required. The developer shall install storm water runoff facilities and shall phase the development activities to prevent construction site storm water runoff and off-site sedimentation. During all construction activities on the development site, the Township Engineer may inspect the development site to ensure compliance with the approved construction site runoff controls.

Sec. 2.06 Financial Guarantee

- (1) A storm water permit shall not be issued unless the permittee shall first post with the Township a bond executed by the landowner and a corporate surety with authority to do business in the State of Michigan as a surety.
- (2) The bond shall be in a form approved by the Township, payable to the Township and in the amount of the estimated total cost to implement the storm water plan. The total cost shall be estimated by the Applicant and reviewed by the Township. In lieu of a surety bond, the applicant may file with the Township, a Letter of Credit or cash deposit in the amount equal to that which would be required for the surety bond.
- (3) Every bond and instrument of credit shall include and every cash deposit shall be made on the conditions that the permittee shall comply with all of the provisions of this Ordinance and all of the terms and conditions of the storm water permit, and shall complete all of the work contemplated under the storm water permit within the time limit specified in the storm water permit, or if no time limit is specified, within 180 days after the date of the issuance of the storm water permit.

Sec. 2.07 Certificate of Occupancy

No certificate of occupancy shall be issued until storm water runoff facilities have been completed in accordance with the approved drainage plan; provided, however, the Township may issue a certificate of occupancy if an acceptable letter of credit or other financial guarantee has been submitted to the Township, for the timely and satisfactory construction of all storm water runoff facilities and site grading in accordance with the approved drainage plan.

Sec. 2.08 No Change in Approved Facilities

Storm water runoff facilities, after construction and approval, shall be maintained in good condition, in accordance with the approved drainage plan, and shall not be subsequently altered, revised or replaced except in accordance with the approved drainage plan, or in accordance with approved amendments or revisions in the plan.

Sec. 2.09 Terms and Conditions of Permits

In granting a storm water permit, the Township may impose such terms and conditions as are reasonably necessary to make the purposes of this ordinance. A developer shall comply with such terms and conditions.

Article III – Storm Water System, Floodplain and Other Standards, Soil Erosion Control

Sec. 3.01 Management of and Responsibility for Storm Water System

The Township is not responsible for providing drainage facilities on private property for the management of storm water on said property. It shall be the responsibility of the property owner to provide for, and maintain, private storm water runoff facilities serving the property and to prevent or correct the accumulation of debris that interferes with the drainage function of a water body.

Sec. 3.02 Storm Water System

All storm water runoff facilities shall be constructed and maintained in accordance with all applicable federal, state and local ordinances, and rules and regulations.

Sec. 3.03 Storm Water Discharge Rates and Volumes As amended by Ord no 2 of 2008; 5/14/2008

The Township is authorized to establish minimum design standards for storm water discharge release rates and to require dischargers to implement on-site retention, detention or other methods necessary to control the rate and volume of surface water runoff discharged into the storm water drainage system, on any site which will be developed, re-developed, or modified.

Sec. 3.04 Floodplain Standards

- (1) All new buildings and substantial improvements to existing buildings shall be protected from flood damage up to the Flood Protection Elevation (FPE) and shall be in accordance with all applicable federal, state and local ordinances, and rules and regulations. Floodway alteration shall be permitted only upon review and approval by the Township, in accordance with an approved drainage plan.
- (2) A drainage plan providing for the filling or alteration of a floodway may include provisions for maintaining stability of the banks of streams or other water bodies, by means of the establishing of buffer zones and other means of providing protection of the slopes and banks of water bodies.
- (3) Within any required buffer zone, no earth change shall take place except in accordance with the approved drainage plan. Such a plan may also include provisions for the replacement of floodplain storage volume, where such storage volume is lost or diminished because of approved development.

Sec. 3.05 Soil Erosion and Sedimentation Control

- (1) All persons who cause, in whole or in part, any earth change to occur shall provide soil erosion and sedimentation control so as to adequately prevent

soils from being eroded and discharged or deposited onto adjacent properties or into a storm water drainage system, a public street or right of way, wetland, creek, stream, water body, or floodplain. All development shall be in accordance with all applicable federal, state and local ordinances, rules and regulations.

- (2) During any earth change that exposes soil to an increased risk of erosion or sediment track-out, the property owner and other persons causing or participating in the earth change shall do the following:
- (a) Comply with the storm water management standards of this ordinance.
 - (b) Obtain and comply with the terms of a soil erosion and sedimentation control permit if required by law.
 - (c) Prevent damage to any public utilities or services within the limits of grading and within any routes of travel or areas of work of construction equipment.
 - (d) Prevent damage to or impairment of any water body on or near the location of the earth change or affected thereby.
 - (e) Prevent damage to adjacent or nearby land.
 - (f) Apply for all required approvals or permits prior to the commencement of work.
 - (g) Proceed with the proposed work only in accordance with the approved plans and in compliance with this ordinance.
 - (h) Maintain all required soil erosion and sedimentation control measures, including but not limited to, measures required for compliance with the terms of this ordinance.
 - (i) Promptly remove all soil, sediment, debris, or other materials applied, dumped, tracked, or otherwise deposited on any lands, public streets, sidewalks, or other public ways or facilities, including catch basins, storm sewers, ditches, drainage swales, or water bodies. Removal of all such soil, sediment, debris or other materials within twenty-four (24) hours shall be considered prima facie compliance with this requirement, unless such materials present an immediate hazard to public health and safety.
 - (j) Refrain from grading lands at locations near or adjoining lands, public streets, sidewalks, alleys, or other public or private property without providing adequate support or other measures so as to protect such other lands, streets, sidewalks or other property from settling, cracking or sustaining other damage.

- (k) Request and obtain inspection of soil erosion and sedimentation control facilities, by the Township at such frequency as required by the Township.

Sec. 3.06 Building Openings

- (1) No building opening shall be constructed below the following elevations:
 - (a) One foot above the 100-year floodplain.
 - (b) The building opening established at the time of plat or development approval and on file in the Township Engineering Department.
 - (c) Three feet above the top of any downstream culvert.
 - (d) Four feet above the bottom of any permanent and defined drain.
- (2) A waiver from elevations stated in Section 3.05(1) may be granted by the Township Engineer following receipt of a certification from a registered professional engineer demonstrating that the proposed elevation does not pose a risk of flooding.
- (3) Upon completion of construction of the structure's foundation and or slab on grade, a registered land surveyor shall certify any minimum building opening elevation specified by this ordinance. This certificate shall attest that the building opening elevation complies with the standards of this ordinance. The permittee for the building permit shall submit the certificate to the Township Building Inspections official before the commencement of framing and/or structural steel placement. If the surveyor should find that the minimum building opening elevation is below the elevation specified in Section 3.06(1)(b) or (c), that opening must be raised using a method that meets with the approval of the Township. After reconstruction, a registered land surveyor or engineer shall re-certify that the minimum building opening elevation complies with the standards of this ordinance before the commencement of framing and or structural steel placement.

Sec. 3.07 Sump Pump Discharge

- (1) Whenever building footing drains are required or utilized, a direct connection between the footing drains through a sump pump-check valve system to a storm sewer is required. A gravity system is not permitted.
- (2) A storm water lateral shall be provided for each parcel at the time of storm sewer construction.

Sec. 3.08 Public Health, Safety and Welfare

Protection of the public health, safety and welfare shall be a primary consideration in the design of all storm water runoff facilities.

Article IV – Prohibitions and Exemptions

Sec. 4.01 Prohibited Discharges

- (1) No person shall discharge to a water body, directly or indirectly, any substance other than storm water or an exempted discharge. Any person discharging storm water shall effectively prevent pollutants from being discharged with the storm water, except in accordance with best management practices.
- (2) The Township is authorized to require dischargers to implement pollution prevention measures, utilizing BMPs, necessary to prevent or reduce the discharge of pollutants into the Township's storm water drainage system.

Sec. 4.02 Exempted Discharges

The following non-storm water discharges shall be permissible, if they do not result in a violation of State of Michigan water quality standards:

- Water supply line flushing
- Landscape irrigation
- Diverted stream flows
- Rising ground water
- Uncontaminated ground water infiltration to storm drains
- Uncontaminated pumped ground water
- Discharges from potable water sources
- Foundation drains
- Air conditioning condensate
- Individual residential car washing
- Dechlorinated swimming pool water
- Street wash water
- Discharges or flows from emergency fire fighting activities
- Discharges for which a specific federal or state permit has been issued.

Sec. 4.03 Interference with Natural or Artificial Drains

- (1) It shall be unlawful for any person to stop, fill, dam, confine, pave, alter the course of, or otherwise interfere with any natural or constructed drain, or drainageway without first submitting a drainage plan to the Township and receiving approval of that plan. Any deviation from the approved plan is a violation of this ordinance. This section shall not prohibit, however, necessary emergency action to prevent or mitigate drainage that would be injurious to the environment, the public health, safety, or welfare.
- (2) No filling, blocking, fencing or above-surface vegetation planting shall take place within a floodway.
- (3) For an overland flow-way:

- (a) Silt screen fences shall not be permitted below the top of the bank of a water body.
 - (b) Chain link fences shall be permitted if the Township determines that the fence will not obstruct or divert the flow of water.
 - (c) If a fence is removed by the Township for drain access or drain maintenance, the fence shall be replaced by the owner of the fence at the owner's expense.
 - (d) No shrubs or trees shall be planted below the top of the bank of a water body.
- (4) Shrubs, trees or other above-ground vegetation shall not be planted over the top of an underground storm sewer or over the top of the easement within which the storm sewer has been installed.

Sec. 4.04 Storage of Hazardous or Toxic Materials in Drainageway

Except as permitted by law, it shall be unlawful for any person to store or stockpile within a drainageway any hazardous or toxic materials unless adequate protection and/or containment has been provided so as to prevent any such materials from entering a drainageway.

Article V – Inspection, Monitoring, Reporting, and Record Keeping.

Sec. 5.01 Inspection and Sampling

To assure compliance with the standards in this pervasively regulated area, the Township may inspect and/or obtain storm water samples from storm water runoff facilities of any discharger to determine compliance with the requirements of this ordinance. Upon request, the discharger shall allow the Township's properly identified representative to enter upon the premises of the discharger at all hours necessary for the purposes of such inspection or sampling. The Township shall provide the discharger reasonable advance notice of such inspection and/or sampling. The Township or its properly identified representative may place on the discharger's property the equipment or devices used for such sampling or inspection.

Sec. 5.02 Storm Water Monitoring Facilities

A discharger of storm water runoff shall provide and operate equipment or devices for the monitoring of storm water runoff, so as to provide for inspection, sampling, and flow measurement of each discharge to a water body or a storm water runoff facility, when directed in writing to do so by the Township. The Township may require a discharger to provide and operate such equipment and devices if it is necessary or appropriate for the inspection, sampling and flow measurement of discharges in order to determine whether adverse effects from or because of such discharges may occur. All such equipment and devices for the inspection, sampling

and flow measurement of discharges shall be installed and maintained in accordance with applicable laws, ordinances and regulations.

Sec. 5.03 Accidental Discharges

- (1) Any discharger who accidentally discharges into a water body any substance other than storm water or an exempted discharge shall immediately inform the Township concerning the discharge. If such information is given orally, a written report concerning the discharge shall be filed with the Township within five (5) days. The written report shall specify:
 - (a) The composition of the discharge and the cause thereof.
 - (b) The exact date, time, and estimated volume of the discharge.
 - (c) All measures taken to clean up the accidental discharge, and all measures proposed to be taken to reduce and prevent any recurrence.
 - (d) The name and telephone number of the person making the report, and the name of a person who may be contacted for additional information on the matter.
- (2) A properly reported accidental discharge shall be an affirmative defense to a civil infraction proceeding brought under this ordinance against a discharger for such discharge. It shall not, however, be a defense to a legal action brought to obtain an injunction, to obtain recovery of costs or to obtain other relief because of or arising out of the discharge. A discharge shall be considered properly reported only if the discharger complies with all the requirements of Section 5.03(1).

Sec. 5.04 Record Keeping Requirement

Any person subject to this ordinance shall retain and preserve for no less than three (3) years any and all books, drawings, plans, prints, documents, memoranda, reports, correspondence and records, including records on magnetic or electronic media and any and all summaries of such records, relating to monitoring, sampling and chemical analysis of any discharge or storm water runoff from any property.

Article VI – Enforcement

Sec. 6.01 Sanctions for Violation

- (1) Any person violating any provision of this ordinance shall be responsible for a municipal civil infraction and subject to a fine of not less than \$500 for a first offense, and not less than \$1,000 for a subsequent offense, plus costs, damages, expenses, and other sanctions as authorized under Chapter 87 of the Revised Judicature Act of 1961 and other applicable laws, including, without limitation, equitable relief; provided, however, that the violation stated in Section 6.01(2) shall be a misdemeanor. Each day such violation occurs or continues shall be deemed a separate offense and shall make the violator liable for the imposition of a fine for each day. The rights and remedies provided for in this section are cumulative and in addition to any other remedies provided by law. An admission or determination of responsibility shall not exempt the offender from compliance with the requirements of this ordinance.

For purposes of this section, "subsequent offense" means a violation of the provisions of this ordinance committed by the same person within 12 months of a previous violation of the same provision of this ordinance for which said person admitted responsibility or was adjudicated to be responsible.

The Township Manager or Planning Director is authorized to issue municipal civil infraction citations to any person alleged to be violating any provision of this ordinance.

- (2) Any person who neglects or fails to comply with a stop work order issued under Section 6.02 shall, upon conviction, be guilty of a misdemeanor, punishable by a fine of not more than \$500 or imprisonment in the county jail for not more than 93 days, or both such fine and imprisonment, and such person shall also pay such costs as may be imposed in the discretion of the court.
- (3) Any person who aids or abets a person in a violation of this ordinance shall be subject to the sanctions provided in this section.

Sec. 6.02 Stop Work Order

Where there is work in progress that causes or constitutes in whole or in part, a violation of any provision of this ordinance, the Township is authorized to issue a Stop Work Order to prevent further or continuing violations or adverse effects. All persons to whom the stop work order is directed, or who are involved in any way with the work or matter described in the stop work order shall fully and promptly comply therewith. The Township may also undertake or cause to be undertaken, any necessary or advisable protective measures to prevent violations of this ordinance or to avoid or reduce the effects of noncompliance herewith. The cost of any such protective measures shall be the responsibility of the owner of the property upon which the work is being done and the responsibility of any person carrying out or participating in the work, and such cost shall be a lien upon the property.

Sec. 6.03 Failure to Comply; Completion

In addition to any other remedies, should any owner fail to comply with the provisions of this ordinance, the Township may, after the giving of reasonable notice and opportunity for compliance, have the necessary work done, and the owner shall be obligated to promptly reimburse the Township for all costs of such work.

Sec. 6.04 Emergency Measures As amended by Ord no 2 of 2008; 5/14/2008

When emergency measures are necessary to moderate a nuisance, to protect public safety, health and welfare, and/or to prevent loss of life, injury or damage to property, the Township is authorized to carry out or arrange for all such emergency measures. Property owners shall be responsible for the cost of such measures made necessary as a result of a violation of this ordinance, and shall promptly reimburse the Township for all of such costs.

Sec. 6.05 Cost Recovery for Damage to Storm Drain System

A discharger shall be liable for all costs incurred by the Township as the result of causing a discharge that produces a deposit or obstruction, or causes damage to, or impairs a storm drain, or violates any of the provisions of this ordinance. Costs include, but are not limited to, those penalties levied by the EPA or MDEQ for violation of an NPDES permit, attorney fees, and other costs and expenses.

Sec. 6.06 Collection of Costs; Lien

Costs incurred by the Township and the Drain Commissioner pursuant to Sections 6.02, 6.03, 6.04 and 6.05 shall be a lien on the premises which shall be enforceable in accordance with Act No. 94 of the Public Acts of 1933, as amended from time to time. Any such charges which are delinquent for six (6) months or more may be certified annually to the Township Treasurer who shall enter the lien on the next tax roll against the premises and the costs shall be collected and the lien shall be enforced in the same manner as provided for in the collection of taxes assessed upon the roll and the enforcement of a lien for taxes. In addition to any other lawful enforcement methods, the Township or the Drain Commissioner shall have all remedies authorized by Act No. 94 of the Public Acts of 1933, as amended.

Sec. 6.07 Appeals

Any person as to whom any provision of this ordinance has been applied may appeal in writing, not later than 30 days after the action or decision being appealed from, to the Township Board the action or decision whereby any such provision was so applied. Such appeal shall identify the matter being appealed, and the basis for the appeal. The Township Board shall consider the appeal and make a decision whereby it affirms, rejects or modifies the action being appealed. In considering any such appeal, the Township Board may consider the recommendations of the Township Engineer and the comments of other persons having knowledge of the matter. In considering any such appeal, the Township Board may grant a variance from the

terms of this ordinance to provide relief, in whole or in part, from the action being appealed, but only upon finding that the following requirements are satisfied:

- (1) The application of the ordinance provisions being appealed will present or cause practical difficulties for a development or development site; provided, however, that practical difficulties shall not include the need for the developer to incur additional reasonable expenses in order to comply with the ordinance; and
- (2) The granting of the relief requested will not substantially prevent the goals and purposes sought to be accomplished by this ordinance, nor result in less effective management of storm water runoff.

Article VII – Storm Water Easements and Maintenance Agreements

Sec. 7.01 Applicability of Requirements

The requirements of this Article concerning storm water easements and maintenance agreements shall apply to all persons required to submit a drainage plan to the Township for review and approval.

Sec. 7.02 Storm Water Management Easements

The developer shall provide all storm water management easements necessary to implement the approved drainage plan and to otherwise comply with this ordinance in form and substance required by the Township and shall record such easements as directed by the Township. The easements shall assure access for proper inspection and maintenance of storm water runoff facilities and shall provide adequate emergency overland flow-ways.

Sec. 7.03 Maintenance Agreements

The developer shall provide all storm water maintenance agreements necessary to implement the approved drainage plan and to otherwise comply with this ordinance in form and substance as required by the Township, and shall record such agreements as directed by the Township. The maintenance agreements shall, among other matters, assure access for proper inspection and maintenance of storm water runoff facilities and adequate emergency overland flow-ways.

Sec. 7.04 Establishment of County Drains

Before final approval, all storm water management facilities for platted subdivisions shall be established as county drains, as authorized in Section 433, Chapter 18 of the Michigan Drain Code (P.A. 40 of 1956, as amended) for long-term maintenance.

Article VIII – Performance and Design Standards

Sec. 8.01 Performance Standards

In order to achieve the goals and purposes of this ordinance, the following three storm water management zones (Zones A, B and C) are hereby established. The Zones are shown on the map attached as Appendix A and made a part of this ordinance.

- (1) Zone A represents areas that require the most protective storm water management regulations. The goal of this zone is to preserve the natural condition of water bodies included in it, in whole or in part. Zone A has, in general, little impervious surface area and few storm water facilities. In this zone, when site conditions permit, infiltration of storm water runoff shall be required, rather than the directed flow of storm water runoff into water bodies. This storm water management practice provides greater protection for surface water quality, and assists in augmenting stream base flow, reduction of flash storm flows and prevention of stream bank erosion. Section 8.02 specifies design criteria for Zone A, in order that the volume and rate of storm water runoff are controlled at predevelopment levels.
- (2) Zone B represents developed areas that have significant impervious surfaces and storm water runoff facilities in place. The goal of Zone B is the control of storm water runoff in order to prevent further destabilizing of streams and other water bodies. In this zone, the use of detention ponds, the maintenance and enhancement of buffer strips and other measures to reduce directly-connected impervious areas are specified in Section 8.02 for the achieving of the storm water management standards applicable to Zone B. The management practices for this zone are intended to maintain existing water quality and to alleviate adverse downstream impact on water bodies.
- (3) Zone C consists of highly urbanized areas, or areas where there has been significant modification of drainageways. Areas with adequate conveyance capacity for a 100-year storm to a river or lake may also be located in Zone C. Among the measures required in Zone C, as stated in Section 8.02, are the use of sediment basins, the maintenance and enhancement of buffer strips along water bodies and the reduction of impervious surface areas that are directly connected to water bodies. An important element of storm water management practice in Zone C is the control and prevention of sedimentation, in order to reduce pollution of water bodies.

Sec. 8.02 Design Standards As amended by Ord no 2 of 2008; 5/14/2008

1) Storm Zone A Flood Control Requirements:

- a. Utilize retention ponds (above or below grade) and infiltration to the greatest extent possible as allowed by the local soil conditions
- b. Design shall be in accordance with the Kent County Drain Commissioner's Development Drainage Rules for Retention Ponds with the following modifications:
 - i. A minimum of two soil borings extending a minimum of 10 feet below each proposed basin bottom with sieve/permeability analysis of the soil in the 10 feet immediately below each proposed basin bottom.
 - ii. Retention basins shall be designed to store runoff from a single 100 year storm event
- c. If soil condition do not permit infiltration, storm water facilities will satisfy one of the following:
 - i. Provide a permanent on-site storm water system with a restricted outlet sufficient to provide on-site detention of storm water runoff in a twenty-five (25) year storm event, and a direct connection (overland or underground) for all storm water runoff that will be discharged from and through the development site in a one hundred (100) year storm event; or
 - ii. Provide a permanent on-site storm water system with a restricted outlet designed to provide on-site detention or on-site retention of storm water runoff in a one hundred (100) year storm event.

2) Storm Zone B Flood Control Requirements must satisfy one of the following:

- a) Provide a permanent on-site storm water system with a restricted outlet sufficient to provide on-site detention or on-site retention of storm water runoff in a twenty-five (25) year storm event, and a direct connection (overland or underground) for all storm water runoff that will be discharged from and through the development site in a one hundred (100) year storm event; or
- b) Provide a permanent on-site storm water system with a restricted outlet designed to provide on-site detention or on-site retention of storm water runoff in a one hundred (100) year storm event.

3) The following shall be in accordance with the Kent County Drain Commissioner's Development Drainage Rules:

- a. Design storm duration and distribution
- b. Required Calculation Methods
- c. Emergency Spillway Design

- 4) If proposed site grading changes the surface area contributing to specific discharge points on the site, storm water control release rates shall be based on pre-development contributing areas.
- 5) All storm water control systems shall be designed to convey storm water from off-site around, not through, the proposed on-site storm water system and shall be provide pass-through capacity of the 25 year storm event for all off-site drainage, provided a 100 year floodway is available.

- 6) Storm systems designed to work in-line with drainage courses conveying off-site drainage shall be subject to special review and may be subject to more stringent requirements.
- 7) On-site storm water conveyance systems shall be designed to convey storm water runoff from a ten (10) year storm event using Manning's Equation for full flow capacity calculations
- 8) Water quality controls for Storm Zone C and equivalent treatment for Storm Zones A and B shall be designed to meet a removal efficiency of 75% for a very fine sand (settling velocity of 0.03-feet per second)

a. Removal efficiency of sediment basins shall be determined with the following formula: $E = 1 - (1 + AV/NQ)^{-N}$

- E = 75% removal efficiency (decimal form)
- A = Basin surface area (sf)
- V = Particle velocity (0.03 ft/sec)
- N = Number of sediment cells
- Q = Inflow (cfs)

9) All underground detention/retention basins shall have water quality controls to prevent sediment from entering the detention/retention system. Access for maintenance and sediment removal shall be provided.

10) The design standards for storm water runoff facilities for Zones A, B and C, as described in Section 8.01, also include the following:

	Zone A	Zone B	Zone C
Storm Water Management Standards	Use infiltration basins, infiltration trenches, extended detention basins, and/or constructed wetlands. Maintain and enhance buffer strips.	Use detention ponds; maintain and enhance buffer strips, and reduce directly connected impervious area.	Use sediment basins, maintain and enhance buffer strips, and reduce directly connected impervious area.
Water Quality Control	Detain the first 0.5" of runoff from the contributing watershed, with infiltration where conditions permit, with 24 hours of detention, or provide equivalent treatment	Detain the first 0.5" of runoff from the contributing watershed for 24 hours or provide equivalent treatment.	Provide sedimentation control within the drainage system.

Bank Erosion Control	Rate of release shall be limited to 0.05 cfs/acre for a 2-year storm event.	Storm water runoff shall not exceed the capacity of the downstream conveyance system.	Storm water runoff shall not exceed the capacity of the downstream conveyance system.
Flood Control	Detention with infiltration when conditions permit. Release rate of 0.13 cfs/acre per KCDC rules.	Release rate of 0.13 cfs/acre per KCDC rules.	Direct conveyance of storm water runoff within the capacity of downstream system.

Sec. 8.03 Resolution to Implement Performance and Design Standards

The Cascade Charter Township Board may adopt a resolution establishing more detailed design and performance standards for storm water runoff facilities, consistent with the terms of this ordinance, and in order to further implement its goals and purposes.

Article IX – Other Matters

Sec. 9.01 Interpretation

Words and phrases in this ordinance shall be construed according to their common and accepted meanings, except that words and phrases defined in Section 1.05 shall be construed according to the respective definitions given in that section. Technical words and technical phrases that are not defined in this ordinance but which have acquired particular meanings in law or in technical usage shall be construed according to such meanings.

Sec. 9.02 Catch-Line Headings

The catch-line headings of the articles and sections of this ordinance are intended for convenience only, and shall not be construed as affecting the meaning or interpretation of the text of the articles or sections to which they may refer.

Sec. 9.03 Severability

The provisions of this ordinance are hereby declared severable, and if any court of competent jurisdiction should declare any part or provision of this ordinance invalid or unenforceable, such invalidity or unenforceability shall not affect any other part or provision of the ordinance.

Sec. 9.04 Other Ordinances

This ordinance shall be in addition to other ordinances of Cascade Charter Township, and shall not be deemed to repeal or replace other ordinances or parts thereof except to the extent that such repeal is specifically provided for in this Article.

Sec. 9.05 Effective Date

This ordinance shall become effective, following its publication or following the publication of a summary of its provisions in the Grand Rapids Press, a local newspaper of general circulation.

Sec. 9.06 Ordinance Adoption

The foregoing Ordinance was offered by Board Member Goodyke, supported by Board Member Fox. The roll call vote being as follows:

YEAS: Beahan, Koessel, Carpenter, Julien, Fox, Goldberg
NAYS: None
ABSENT: None

ORDINANCE DECLARED ADOPTED.

By _____
Ron Goodyke
Township Clerk

CERTIFICATION

I hereby certify the above to a true copy of an Ordinance adopted by the Cascade Charter Township Board at a regular meeting held at the Cascade Library – Wisner Center on the 14th day of May, 2008, at 7:00 p.m., pursuant to the required statutory procedures.

By _____
Ron Goodyke
Township Clerk

Cascade Charter Township
Kent County Michigan
Resolution 24 of 2002

Whereas, on May 22, 2002, the Cascade Charter Township Board adopted Ordinance No.7 of 2002, the Storm Water Ordinance;

Whereas, Section 8.03 of said ordinance provides that Cascade Charter Township may adopt by resolution additional design and performance standards for water runoff facilities, consistent with the terms of the ordinance, in order to further implement its goals and purposes;

Whereas, the Cascade Charter Township Board now desires to adopt such additional design and performance standards for storm water runoff facilities and other standards pertaining to storm water management.

It Is Therefore Resolved As Follows:

Section 1. Storm Water Management Zones. The performance standards stated in Section 8.01 of said ordinance are hereby supplemented as follows:

- a) In any single development site, up to three different detention volumes may be calculated to determine the staged outlet elevations: (1) water quality control, (2) bank erosion control, and (3) flood control. The volumes are not intended to be additive; the flood control volume shall include the water quality and bank erosion control volumes.
- b) The default flood control volume shall be based on detaining the 25-year storm frequency so long as the downstream storm water conveyance system has adequate capacity and includes an acceptable emergency overland floodway. If the design engineer determines the downstream conveyance system is not adequate or an acceptable emergency overland floodway does not exist, then the flood control volume shall be based on detaining the 100-year storm.

Section 2. Flood Plain Protection. Section 8.01 of said ordinance is supplemented as follows:

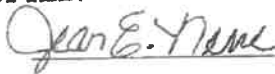
- a) Natural floodway filling or alteration shall not be allowed without review and approval by Cascade Charter Township and compliance with the Floodplain Regulatory Authority found in Part 31, Water Resource Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) on watercourses with contributing drainage are of 2 square miles or greater. If floodway has not been mapped, the applicant's consultant shall provide the floodway delineation to Cascade Charter Township for approval.
- b) Natural floodway fringe filling or alteration shall not be allowed without review and approval by Cascade Charter Township and compliance with the Floodplain Regulatory Authority found in Part 31, Water Resource Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA) on watercourses with contributing drainage are of 2 square miles or greater. If floodway has not been mapped, the applicant's consultant shall provide the floodway delineation to Cascade Charter Township for approval.

- c) To provide for stream bank stability a buffer zone is to be established and called out on a recorded plat, an approved block grading plan, a site plan or an improvement plan. This zone shall consist of existing natural tree and vegetation slope protection within a minimum of 24 feet from the ordinary high-water mark.
- d) Replacement of lost floodplain shall meet the following criteria.
 - a. Replacement of the loss of floodplain storage volume at a 1 to 1 ratio unless watershed conditions warrant a higher ratio. This applies to floodplain associated with rainfall events up to a 100-year frequency. The grading plan shall provide for an equivalent volume of storage for floodplains associated with more frequent events such as 10 and 25-year frequencies.
 - b. Storm water detention does not apply toward the replacement volume.
 - c. Floodplain storage volume shall be computed above the seasonal high ground water level only.
 - d. The inflow and outflow rates to the area shall be consistent with predevelopment rates.
 - e. Up to 50% of the floodplain mitigation storage volume may be used for snow storage.
 - f. The proximity of the floodplain mitigation area shall provide for an equivalent hydrologic impact to the receiving stream and adjacent parcels.

The foregoing Resolution was offered by Board Member Jones, supported by Board Member Carpenter. The roll call vote being as follows:

YEAS: Goodyke, Timmons, Carpenter, Julien, Jones
NAYS:
ABSENT: Kleinheksel, Parrish

RESOLUTION DECLARED ADOPTED.

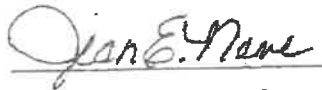


Jean E Neve
Deputy Township Clerk

CERTIFICATION

I hereby certify the above to a true copy of a resolution adopted by the Cascade Charter Township Board at a regular meeting held at the Township Museum Building on the 22nd day of May, 2002 pursuant to the required statutory procedures.

Dated: May 23, 2002



Jean E Neve
Deputy Township Clerk

**Cascade Charter Township
Kent County Michigan
Resolution 25 of 2002**

Whereas, Cascade Charter Township administers various operations which require service or administrative fees.

Whereas, Cascade Charter Township from time to time reviews and evaluates its administrative and service costs to insure that the fees assessed are in line with the cost to provide such service.

Now, Therefore, Be It Resolved that Cascade Charter Township hereby adopts the attached Cascade Charter Township Storm Water Permit Fee Schedule (Exhibit A), which shall become effective upon the publication date of the Storm Water Ordinance (Ordinance # 7 of 2002).

And, Be It Further Resolved that this action shall not limit the Township Board from waiving all or part of any fee or administrative review rate upon direct appeal by the applicant.

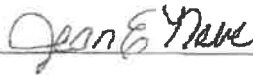
The foregoing Resolution was offered by Board Member Goodyke, supported by Board Member Jones. The roll call vote being as follows:

YEAS: Timmons, Goodyke, Carpenter, Julien, Jones

NAYS:

ABSENT: Kleinheksel, Parrish

RESOLUTION DECLARED ADOPTED.

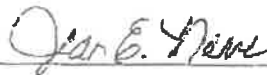


Jean E Neve
Deputy Township Clerk

CERTIFICATION

I hereby certify the above to a true copy of a resolution adopted by the Cascade Charter Township Board at a regular meeting held at the Township Museum Building on the 22nd day of May, 2002 pursuant to the required statutory procedures.

Dated: May 23, 2002



Jean E Neve
Deputy Township Clerk

EXHIBIT A

Cascade Charter Township Storm Water Permit Fee Schedule

At the time of application for a storm water permit, the applicant shall deposit with the Township Clerk, as an escrow deposit, an initial amount of \$500. Any excess funds remaining in the escrow account after the application has been fully processed, reviewed, and the final Township approval and acceptance of the storm water plan has occurred, will be refunded to the applicant with no interest to be paid on those funds. If the funds in the account are reduced to less than the required initial amount, the applicant shall deposit an additional \$500 into the account, before the application review process will be continued. Additional amounts may be required to be placed in the escrow account by the applicant, at the discretion of the Township.

All expenses and costs incurred by the Township directly associated with processing, reviewing and approving or denying a storm water permit application shall be paid (or reimbursed) to the Township from the funds in the escrow account established by the applicant, as described above. The Township may draw funds from an applicant's escrow account to reimburse the Township for out-of-pocket expenses incurred by the Township relating to the application. Such reimbursable expenses include, but are not limited to, expenses related to the following:

- (a) Services of the Township Attorney directly related to the application.
- (b) Services of the Township Engineer directly related to the application.
- (c) Services of other independent contractors working for the Township that are directly related to the application.
- (d) Any additional public hearings, required mailings and legal notice requirements necessitated by the application.

PROPOSED MODEL STORMWATER ORDINANCE

FOR LOCAL GOVERNMENTS
WITHIN THE LOWER GRAND RIVER
WATERSHED

20182022

CASCADE CHARTER TOWNSHIP

Prepared by the Stormwater Ordinance Committee of the
Lower Grand River Watershed

GVMC

ACKNOWLEDGEMENTS

This version of the Kent County Model Ordinance was based on the 2001 Kent County Model Ordinance, which was created through a collaboration of municipal officials, engineers, attorneys, and stormwater management experts led by the Kent County Drain Office. The Stormwater Discharge Permit Applications submitted by the communities in the Lower Grand River Watershed in April 2015 included a commitment by all permittees to develop and submit a revised ordinance or regulatory process, which required numerous adjustments and modifications to the 2001 version to meet the new requirements. A Stormwater Ordinance (SWOrd) Committee was formed in June 2014 to fulfill that commitment.

The committee members, with support of their community, contributed their time, efforts and talent toward the preparation of this document. The Grand Valley Metro Council would like to acknowledge the assistance provided from all of the members to the completion of this Model Ordinance and to thank them for their efforts toward creating a coordinated approach to storm water management and regulations among the Lower Grand local governments.

DRAFT

63 PROPOSED MODEL STORMWATER ORDINANCE
64 FOR
65 LOCAL GOVERNMENTS
66 WITHIN THE LOWER GRAND RIVER WATERSHED

67 CONTENTS
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70 ARTICLE I - GENERAL.....

71 Sec. 1.01 Statutory Authority and Title

72 Sec. 1.02 Findings.....

73 Sec. 1.03 Purpose

74 Sec. 1.04 Applicability, Exemptions and General Provisions.....

75 Sec. 1.05 Definitions.....

76 ARTICLE II – STORMWATER PERMITS

77 Sec. 2.01 Permit Required.....

78 Sec. 2.02 Stormwater Permit Review Procedures.....

79 Sec. 2.03 Drainage Plan.....

80 Sec. 2.04 Stormwater Permit Review Fees.....

81 Sec. 2.05 Construction Site Runoff Controls

82 Sec. 2.06 Performance guarantee.....

83 Sec. 2.07 Certificate of Occupancy

84 Sec. 2.08 No Change in Approved Facilities

85 Sec. 2.09 Terms and Conditions of Permits

86 ARTICLE III – STORMWATER SYSTEM, FLOODPLAIN AND OTHER STANDARDS,
87 SOIL EROSION CONTROL.....

88 Sec. 3.01 Management of and Responsibility for Stormwater System

89 Sec. 3.02 Stormwater System

90 Sec. 3.03 Stormwater Discharge Rates and Volumes.....

91 Sec. 3.04 Floodplain Standards.....

92 Sec. 3.05 Soil Erosion and Sedimentation Control

93 Sec. 3.06 Building Openings

94 Sec. 3.07 Sump Pump Discharge.....

95 ARTICLE IV – PROHIBITIONS AND EXEMPTIONS.....

96 Sec. 4.01 Prohibited Discharges

97 Sec. 4.02 Exempted Discharges

98 Sec. 4.03 Interference with Natural or Artificial Drains

99 Sec. 4.04 Storage of Materials in Drainageway.....

100 ARTICLE V – INSPECTION, MONITORING, REPORTING, AND RECORDKEEPING..

101 Sec. 5.01 Inspection and Sampling

102 Sec. 5.02 Stormwater Monitoring Facilities

103 Sec. 5.03 Accidental Discharges.....

104 Sec. 5.04 Record Keeping Requirement

105 ARTICLE VI – ENFORCEMENT

106 Sec. 6.01 Sanctions for Violation.....

107 Sec. 6.02 Stop Work Order.....

108 Sec. 6.03 Failure to Comply; Completion

109 Sec. 6.04 Emergency Measures.....

110 Sec. 6.05 Cost Recovery for Damage to Storm Drain System

111 Sec. 6.06 Collection of Costs; Lien

112 Sec. 6.07 Appeals

113 Sec. 6.08 Suspension of MS4 Access.....

114 ARTICLE VII – STORMWATER EASEMENTS AND MAINTENANCE AGREEMENTS .

115 Sec. 7.01 Applicability of Requirements

116 Sec. 7.02 Stormwater Management Easements

117 Sec. 7.03 Maintenance Agreements.....

118 Sec. 7.04 Establishment of County Drains

119 ARTICLE VIII – PERFORMANCE AND DESIGN STANDARDS.....

120 Sec. 8.01 Design Standards.....

121 Sec. 8.02 Performance Standards.....

122 Sec. 8.03 Alternative Approach for Channel Protection.....

123 Sec. 8.04 Resolution to Implement Performance and Design Standards

124 ARTICLE IX – OTHER MATTERS

125 Sec. 9.01 Interpretation

126 Sec. 9.02 Catch-Line Headings

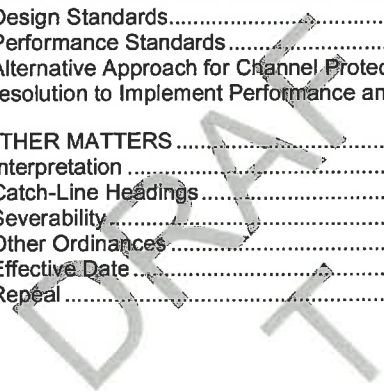
127 Sec. 9.03 Severability.....

128 Sec. 9.04 Other Ordinances.....

129 Sec. 9.05 Effective Date

130 Sec. 9.06 Repeal

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132 CASCADE CHARTER TOWNSHIP

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134 COUNTY OF KENT, MICHIGAN

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137 **AN ORDINANCE** to provide for the regulation and control of stormwater
138 runoff; to provide for stormwater Permits and the procedures and
139 standards for the issuance thereof; to provide for payment or
140 reimbursement of costs and expenses incurred by Cascade Charter
141 Township associated with stormwater Permits and the consideration
142 thereof; to establish standards and requirements for the protection of
143 Floodways and for the control of Soil Erosion and sedimentation; to adopt
144 other provisions for the establishing, maintaining and protection of drains
145 and drainageways; to provide regulations for the inspection, sampling and
146 monitoring of stormwater and other discharges; to establish performance
147 and design standards for stormwater management in Cascade Charter
148 Township; and to provide penalties for violations of the ordinance.
149

150 THE BOARD OF CASCADE CHARTER TOWNSHIP ORDAINS:

151
152 **Article I - General**

153
154 **Sec. 1.01 Statutory Authority and Title**

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159 This ordinance is adopted in accordance with the Charter Township Act, as
160 amended, being MCL 42.1, et seq.; the Township and Village Public
161 Improvement Act, as amended, being MCL 11.721, et seq.; the Drain Code of
162 1956, as amended, being MCL 280.1, et seq.; the Land Division Act, as
163 amended, being MCL 560.1, et seq.; the Revenue Bond Act, as amended, being
164 MCL 141.101, et seq.; and the Natural Resources and Environmental Protection
165 Act, as amended, being MCL 324.101, et seq.; Section 401(p) of the Federal
166 Water Pollution Control Act (also known as the Clean Water Act), as amended,
167 being 33 USC 1342(p) and 40 CFR Parts 9, 122, 123 and 124; and other
168 applicable state and federal laws.
169

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171
172 This ordinance shall be known and may be cited as the Cascade Charter
173 Township Stormwater Ordinance.
174

175 **Sec. 1.02 Findings**

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177 Cascade Charter Township finds that:
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- (1) Water bodies, roadways, structures, and other property within, and downstream of Cascade Charter Township are at times subjected to Flooding;
 - (2) Flooding is a danger to the lives and property of the public and is also a danger to the natural resources of Cascade Charter Township and the region;
 - (3) Land development alters the hydrologic response of Watersheds, resulting in increased Stormwater Runoff rates and volumes, increased Flooding, increased Stream channel erosion, and increased sediment transport and deposition;
 - (4) Stormwater Runoff produced by land development contributes to increased quantities of water-borne Pollutants;
 - (5) Increases of Stormwater Runoff, Soil Erosion, and non-point source pollution have occurred as a result of land development, and cause deterioration of the water resources of Cascade Charter Township and downstream municipalities;
 - (6) Stormwater Runoff, Soil Erosion, and non-point source pollution, due to land development within Cascade Charter Township, have resulted in a deterioration of the water resources of Cascade Charter Township and downstream municipalities;
 - (7) Increased Stormwater Runoff rates and volumes, and the sediments and Pollutants associated with Stormwater Runoff from future Development projects within Cascade Charter Township will, absent reasonable regulation and control, adversely affect Cascade Charter Township's water bodies and water resources, and those of downstream municipalities;
 - (8) Stormwater Runoff, Soil Erosion, and non-point source pollution can be controlled and minimized by the regulation of Stormwater Runoff from Development;
 - (9) Post-Construction Stormwater Runoff Program requirements for new Development and redevelopment within Cascade Charter Township are set forth in the 2013 Michigan Department of Environmental Quality (DEQ) *Permit Application for Discharge of Storm Water to Surface Waters of the State from a Municipal Separate Storm Sewer System (MS4)* under the NPDES program (Rev 10/2014).
 - (10) Adopting the standards, criteria and procedures contained in this ordinance and implementing the same will address many of the deleterious effects of Stormwater Runoff;

- 227 (11) Adopting these standards is necessary for the preservation of the public
 228 health, safety and welfare.
 229
 230 (12) Adopting these standards is necessary to comply with the NPDES MS4
 231 Permit.
 232
 233 (13) Illicit discharges contain ~~Polutants~~ pollutants that will significantly degrade
 234 Cascade Charter Township's waterbodies and water resources
 235
 236 (14) Illicit discharges enter Cascade Charter Township's municipal separate
 237 storm sewer system (MS4) through either direct connections (e.g. sanitary
 238 sewer laterals mistakenly or deliberately connected to the storm sewers)
 239 or indirect connections (e.g. infiltration, or spills conveyed by surface flow
 240 into the storm sewer system).
 241
 242 (15) Establishing and implementing measures for controlling Illicit Discharges
 243 and connections will address many of their deleterious effects.
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245 **Sec. 1.03 Purpose**

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 247 It is the purpose of this ordinance to establish minimum stormwater management
 248 requirements and controls to accomplish, among others, the following objectives:
 249

- 250 (1) To reduce artificially induced Flood damage;
 251
 252 (2) To minimize ~~increased~~ Stormwater Runoff rates and volumes from
 253 identified new land development;
 254
 255 (3) To minimize the deterioration of existing watercourses, culverts and
 256 bridges, and other structures;
 257
 258 (4) To encourage water recharge into the ground where geologically favorable
 259 conditions exist;
 260
 261 (5) To prevent an increase in non-point source pollution;
 262
 263 (6) To maintain the integrity of Stream channels for their biological functions,
 264 as well as for drainage and other purposes;
 265
 266 (7) To minimize the impact of Development upon Stream bank and streambed
 267 stability;
 268
 269 (8) To reduce erosion from Development or construction projects;
 270
 271 (9) To preserve and protect water supply facilities and water resources by
 272 means of controlling increased Flood discharges, Stream erosion, and
 273 runoff pollution; and,
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- (10) To reduce Stormwater Runoff rates and volumes, Soil Erosion, and non-point source pollution, wherever practicable, from lands that were developed without stormwater management controls meeting the purposes and standards of this ordinance.
 - (11) To reduce the adverse impact of changing land use on water bodies and, to that end, this ordinance establishes minimum standards to protect water bodies from degradation resulting from changing land use where there are insufficient stormwater management controls.
 - (12) To regulate the contribution of Pollutants to the municipal separate storm sewer system (MS4) from stormwater discharges.
 - (13) To prohibit Illicit Discharges and connections to the municipal separate storm sewer system.
 - (14) To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this Ordinance.

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296 **Sec. 1.04 Applicability, Exemptions and General Provisions**
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- (1) This ordinance shall apply to all new Development and all redevelopment projects, including private, commercial and public projects that disturb one (1) acre or more, and projects less than one (1) acre that are part of a larger common Plan of Development or sale that would disturb one (1) acre or more.
 - (2) This ordinance shall apply to sites less than one (1) acre as set forth in [Chapter 21 of the Township Zoning Ordinance](#).
 - (3) This ordinance shall not apply to the following:
 - (a) The installation or removal of individual mobile homes within a mobile home park. This exemption shall not be construed to apply to the construction, expansion, or modification of a mobile home park.
 - (b) Construction of, or an addition, extension or modification to, an individual single-family or a two-family detached dwelling
 - (c) Farm operations and buildings, except dwellings, directly related to-farm operations. This exemption shall not apply to greenhouses and other similar structures.

321 (d) Plats with preliminary plat approval and other Developments with
322 final land use approval prior to the effective date of this ordinance,
323 where such approvals remain in effect.

324
325 (e) _____

326
327 (fe) Construction, development or redevelopment associated with
328 aeronautical facilities at the Gerald R. Ford International Airport.
329

330 **Sec. 1.05 Definitions**

331
332 For the purpose of this ordinance, the following words and phrases shall have the
333 meanings respectively ascribed to them by this Section unless the context in which they
334 are used specifically indicates otherwise:

- 335
336 (1) Local Government – Cascade Charter Township, or a properly delegated
337 official.
338
339 (2) Base Flood – A Flood having a one (1) percent chance of being equaled
340 or exceeded in any given year.
341
342 (3) Base Flood Elevation – The high water elevation of the Base Flood,
343 commonly referred to as the "100-year Flood elevation".
344
345 (4) Base Flood Plain – The area inundated by the Base Flood.
346
347 (5) Best Management Practices (BMPs) – A practice, or combination of
348 practices and design criteria that accomplish the purposes of this
349 ordinance (including, but not limited to reducing Stormwater Runoff rates,
350 reducing Stormwater Runoff volume, and reducing the amount of
351 Pollutants in stormwater) as determined by Cascade Charter Township ,
352 and, where appropriate, the standards of the County Drain Commissioner.
353
354 (6) Building Opening – Any opening of a solid wall such as a window or door,
355 through which Floodwaters could penetrate.
356
357 (7) Clean Water Act – The Federal Water Pollution Control Act, 33 USC Sec
358 1251 et seq., as amended, and the applicable regulations promulgated
359 thereunder.
360
361 (8) Construction Site Stormwater Runoff – Stormwater runoff from a
362 Development site following an earth change and before final site
363 stabilization.
364
365 (9) Detention – A system which is designed to capture stormwater and
366 release it over a given period of time through an outlet structure at a
367 controlled rate.
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- (10) Development –The installation or construction of buildings, structures or other Impervious Surfaces on a site that disturbs one (1) acre of land or more, including projects less than one (1) acre that are part of a larger common Plan or sale that would disturb one (1) acre or more. A Development may include a land division, plat, site condominium, planned unit Development, mobile home park, private road or other special land use requiring land use or other review and approval by Cascade Charter Township
 - (11) Developer – Any Person or entity proposing or implementing the Development of land.
 - (12) Development Site – Any land that is being or has been developed, or that a Developer proposes for Development.
 - (13) Discharger – Any Person or entity who directly or indirectly discharges stormwater from any property.
 - (14) Drain – Any drain as defined in the Drain Code of 1956, as amended, being MCL 280.1, et. seq.
 - (15) Drainage – The collection or conveyance of stormwater, ground water and/or surface water.
 - (15) Drainageway – The area within which surface water or ground water is conveyed from one part of a lot or parcel to another part of the lot or parcel or to adjacent land or to a watercourse.
 - (16) Earth Change – Any human activity which removes ground cover, changes the slope or contours of the land, or exposes the soil surface to the actions of wind and rain. Earth change includes, but is not limited to, any excavating, surface Grading, filling, landscaping, or removal of vegetative roots.
 - (17) EPA – The United States Environmental Protection Agency [or any successor agency](#).
 - (18) Erosion – The process by which the ground surface is worn away by action of wind, water, gravity or a combination thereof.
 - (19) Federal Emergency Management Agency (FEMA) – The agency of the federal government charged with emergency management.
 - (20) Flood or Flooding – A general and temporary condition of partial or complete inundation of normally dry land areas resulting from the overflow of water bodies or the unusual and rapid accumulation of surface water runoff from any source.

- 416 (21) Hazardous Material(s) – Any material including any substance, waste or
 417 combination thereof, which because of its quantity, concentration or
 418 physical, chemical, or infectious characteristics may cause, or significantly
 419 contribute to, a substantial present or potential hazard to human health,
 420 safety, property, or the environment when improperly treated, stored,
 421 transported, disposed of, or otherwise managed.
 422
- 423 (22) Local Floodplain – Any land area subject to periodic Flooding as
 424 determined by Cascade Charter Township.
 425
- 426 (23) State-Regulated Floodplain – Any area of land adjoining a river or Stream
 427 that will be inundated by a Base Flood that has a drainage area of 2
 428 square miles or more when measured at the downstream limits of the
 429 proposed Development site.
 430
- 431 (24) Flood-Proofing – Any structural and/or non-structural additions, changes,
 432 or adjustments to structures or property that reduce or eliminate Flood
 433 damage to land, improvements, utilities or structures.
 434
- 435 (25) Flood Protection Elevation (FPE) – The Base Flood Elevation plus one (1)
 436 foot at any given location.
 437
- 438 (26) Floodway – The channel of a river or Stream and the portions of the
 439 Floodplain adjoining the channel that are reasonably required to carry and
 440 discharge a 100-year Flood.
 441
- 442 (27) Grading – Any stripping, excavating, filling, and stockpiling of soil or any
 443 combination thereof, and the land in its excavated or filled condition
 444
- 445 (28) Groundwater - water below the land surface in the zone of saturation as
 446 defined [by the MDEQ in Part 213 of Act No. 451 of the Public Acts of 1994, as amended.](#)
- 447
- 448 (29) High Groundwater – A groundwater elevation which does not meet minimum
 449 distance from the bottom of proposed practice as defined in the
 450 Stormwater Standards Manual.
 451
- 452 (30) Illicit Connection – Any method or means for conveying an Illicit Discharge
 453 into water bodies or Cascade Charter Township's stormwater system.
 454
- 455 (31) Illicit Discharge – Any discharge to water bodies or stormwater systems
 456 that does not consist entirely of stormwater, discharges pursuant to the
 457 terms of an NPDES Permit, or exempted discharges as defined in this
 458 ordinance.
 459
- 460 (32) Impervious Surface – Any surface that does not allow stormwater to
 461 percolate into the ground.
 462

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- 463 (33) Lowest Floor – The lowest floor or the lowest enclosed area (including a
 464 basement), but not including an unfinished or Flood-resistant enclosure
 465 which is usable solely for parking of vehicles or building access.
 466
- 467 (34) MDEQ – Michigan Department of Environmental Quality EGLE – Michigan
Department of Environment, Great Lakes & Energy or any successor department.
- 468
- 469 (35) NPDES – National Pollution Discharge Elimination System The NPDES
 470 Program protects the surface waters of the state by assuring that
 471 discharges of Wastewater comply with state and federal regulations.
 472 Anyone discharging or proposing to discharge Wastewater to the surface
 473 waters of the state are required to make application for and obtain a valid
 474 NPDES Permit prior to Wastewater discharge.
 475
- 476 (36) MS4 – A Municipal Separate Storm Sewer System is a system of drainage
 477 (including roads, Storm Drains, pipes, and ditches, etc.) that is not a
 478 combined sewer or part of a sewage treatment plant. During wet weather,
 479 Pollutants are transported through MS4s to local water bodies.
 480
- 481 (37) MS4 Permit – Regulated Communities with Municipal Separate Storm
 482 Sewer Systems (MS4s) that discharge to waters of the state are required
 483 to obtain a Permit under Section 402 of the Federal Clean Water Act, as
 484 amended, and under ~~the Part 31 (Water Resources Protection) (Part 31, Act~~
 485 PA 1094) of the Michigan Natural Resources and
Environmental
 486 Protection Act (NREPA), as amended, of Act 451 of the Public Acts of 1994, as
amended.
- 487485
- 488486 (38) ~~Overland flow-way~~ Surface area that conveys a concentrated flow of
 489487 Stormwater Runoff.
 490488
- 491489 (39) Person – An individual, firm, partnership, association, public or private
 492490 corporation, public agency, instrumentality, or any other legal entity.
 493491
- 494492 (40) Plan – Written narratives, specifications, drawings, sketches, written
 495493 standards, operating procedures, or any combination of these.
 496494
- 497495 (41) Pollutant – A substance discharged which includes, but is not limited to
 498496 the following: any dredged spoil, solid waste, vehicle fluids, yard wastes,
 499497 animal wastes, agricultural waste products, sediment, incinerator residue,
 500498 sewage, garbage, sewage sludge, munitions, chemical wastes, biological
 501499 wastes, radioactive materials, heat, wrecked or discharged equipment,
 502500 rock, sand, cellar dirt, and industrial, municipal, commercial and
 503501 agricultural waste, or any other contaminant or other substance defined as
 504502 a Pollutant under the Clean Water Act.
 505503
- 506504 (42) Project Site – Area of earth change or disturbance

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507505
508506 (43) Property Owner – Any Person having legal or equitable title to property or
509507 any Person having or exercising care, custody, or control over any
510 property.

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512
513 (44) Retention – A system which is designed to capture stormwater and contain
514 it until it infiltrates the soil or evaporates.
515
516 (45) Riparian Property Owner – A Property Owner who's land is adjacent to a
517 waterbody.
518
519 (46) Sewershed - A catchment defined by Storm Drain infrastructure emptying
520 into a common outlet.
521
522 (47) Soil Erosion – The stripping of soil and weather rock from land creating
523 sediment for transportation by water, wind, or ice, and enabling formation of
524 new sedimentary deposits.
525
526 (48) State of Michigan Water Quality Standards – All applicable State rules,
527 regulations, and laws pertaining to water quality, including the provisions of
528 Section 3106 of Part 31 of ~~1994-PA-454~~Act 451 of the Public Acts of 1994,
529 as amended.
530
531 (49)
532 Storm Drain – A system of open or enclosed conduits and appurtenant
533 structures intended to convey or manage Stormwater Runoff, ground water
534 and drainage.
535
536 (50) Stormwater Permit – A Permit issued pursuant to this ordinance.
537
538 (51) Stormwater Runoff – Water that originates during precipitation events or
539 with snowmelt. Stormwater that does not soak into the ground or evaporate
540 becomes Stormwater Runoff, which either flows directly into surface waters
541 or is channeled into storm drainage systems.
542
543 (52) Stormwater Management Facility – The method, structure, area, system,
544 plantings, trees, or other equipment or measures which are designed to
545 receive, control, store, convey, infiltrate, or treat stormwater.
546
547 (53) Stormwater Standards Manual - establishes a uniform set of minimum
548 stormwater design standards necessary to provide for public safety, the
549 protection of property, and to comply with the National Pollutant Discharge
550 Elimination System (NPDES) Municipal Separate Storm Sewer System
551 (MS4) Individual Permit.
552
553 (54)
554 Stream – A river, Stream or creek which may or may not be serving as a
555 drain, or any other Water Body that has definite banks, a bed, and visible
556 evidence of a continued flow or continued occurrence of water.

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- (565) Substantial Improvement - A repair, reconstruction, or improvement of an existing structure, such that the cost equals or exceeds fifty (50) percent of the true cash value of the structure either:
 - a. before the improvement is started, or
 - b. before the damage occurred if the structure has been damaged and is being restored, or
 - c. Substantial Improvement is started when the first alteration of any structural part of the building commences.
 - (576) Uncontaminated Pumped Groundwater - Pumped groundwater from dewatering wells at sites where no known soil or groundwater contamination exists
 - (587) Wastewater – Any water or other liquid, other than uncontaminated stormwater discharged from a facility.
 - (598) Water Body – A river, lake, Stream, creek or other watercourse or Wetlands.
 - (6059) Watershed – A land area draining into a Water Body.
 - (640) Wetlands – Land characterized by the presence of water at a frequency and duration sufficient to support Wetland vegetation or aquatic life.

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584 **Article II – Stormwater Permits**

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Sec. 2.01 Permit Required.

- (1) No Person shall engage in any Development activity without first receiving a Stormwater Permit from the ~~Local Government~~ Cascade Charter Township pursuant to Section ~~2.02~~.

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- (2) The granting of a Stormwater Permit only authorizes the discharge of stormwater from the Development for which the Permit is required, subject to the terms of the Permit. It shall not be deemed to approve other Development, other land use activities, or replace other required Permits.

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Sec. 2.02 Stormwater Permit Review Procedures

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Cascade Charter Township shall grant a Stormwater Permit, which may impose terms and conditions in accordance with Section 2.09, only upon compliance with each of the following requirements:

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- (1) The Developer has submitted a site (drainage) Plan complying with Section 2.03.
- (2) The Developer has paid or deposited the stormwater Permit review fee pursuant to Section 2.04.
- (3) The Developer has paid or posted any applicable performance guarantee pursuant to Section 2.06.
- (4) The Developer agrees to provide all easements necessary to implement the approved drainage Plan and to otherwise comply with this Ordinance including, but not limited to, Section 7.02. All easements shall be acceptable to Cascade Charter Township in form and substance and shall be recorded with the County Register of Deeds. At the discretion of the local government the final easement may be required to be recorded prior to Permit issuance.

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- (5) The Developer provides the required maintenance agreement for routine, emergency, and long-term maintenance of all structural and vegetative BMPs installed and implemented to meet the performance standards, and to comply with the approved drainage Plan and this Ordinance including, but not limited to, Section 7.03. The maintenance agreement shall be acceptable to Cascade Charter Township in form and substance, may not be amended without the approval of Cascade Charter Township, shall be binding on all future Property Owners, and shall be recorded with the County Register of Deeds.

630 **Sec. 2.03 Drainage Plan.**

631
632 The Developer shall provide adequate stormwater management facilities for the
633 Development site. Adequate facilities reduce the exposure of people to 634
635 drainage-related adverse impacts and to health and safety hazards. They
636 reduce the exposure of real and personal property to damage through
637 stormwater inundation. The stormwater management system and stormwater
638 best management practices (BMPs) shall be designed in accordance with the
639 latest version of the document "Stormwater Standards, Procedures and Design
640 Criteria for Stormwater Management" (aka "Stormwater Standards" manual) of
641 Cascade Charter Township.

642 The Developer shall provide a drainage Plan to Cascade Charter Township for 643
644 review and approval by Cascade Charter Township. The drainage Plan shall
645 identify and contain all of the information required in the "Stormwater Standards"
646 manual, including an implementation Plan relative to the Development site.

647 The implementation Plan for construction and inspection of all stormwater 648
649 management facilities necessary to the overall drainage Plan shall include a
650 schedule of the estimated dates of completing construction of the stormwater
651 management facilities shown on the Plan and an identification of the proposed
652 inspection procedures to ensure that the stormwater management facilities are
653 constructed in accordance with the approved drainage Plan.

654 **Sec. 2.04 Stormwater Permit Review Fees.**

655
656 (1) All expenses and costs incurred by Cascade Charter Township directly
657 associated with processing, reviewing and approving or denying a
658 Stormwater Permit application shall be paid to Cascade Charter Township
659 from the funds in a separate escrow account established by the
660 Developer, as provided in subsection (2). Cascade Charter Township
661 shall draw funds from a Developer's escrow account to reimburse
662 Cascade Charter Township for out-of-pocket expenses incurred by
663 Cascade Charter Township relating to the application. Such reimbursable
664 expenses include, but are not limited to, the following:

- 665 (a) Services of Cascade Charter Township Attorney directly related to
666 the application.
- 667 (b) Services of Cascade Charter Township Engineer directly related
668 to the application.
- 669 (c) Services of other independent contractors or consultants
670 working for Cascade Charter Township which are directly related to
671 the application.
- 672 (d) Any additional public hearings, required mailings and legal
673 notice requirements necessitated by the application.
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(2) At the time a Developer applies for a Stormwater Permit, Cascade Charter Township may require the Developer to deposit with Cascade Charter Township clerk, as an escrow deposit, an initial amount as determined by resolution of the Board of Trustees for such matters and shall provide additional amounts as requested by Cascade Charter Township in such increments as are specified in said resolution. Any excess funds remaining in the escrow account after the application has been fully processed, reviewed, and the final Cascade Charter Township approval and acceptance of the Development has occurred will be refunded to the Developer with no interest to be paid on those funds. At no time prior to Cascade Charter Township's final decision on an application shall the balance in the escrow account fall below the amount as designated by the Local Government. If the funds in the account are reduced to less than the required amount, the Developer shall deposit into the account an additional amount as determined by Cascade Charter Township Board of Trustees resolution, before the application review process will be continued. Additional amounts necessary to process the application may be required to be placed in the escrow account by the Developer, at the discretion of the and based upon the criteria set forth in this ordinance Cascade Charter Township.

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Sec. 2.05 Construction Site Runoff Controls

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Prior to making any earth change on a Development site regulated by this ordinance, the Developer shall first obtain a Soil Erosion Permit issued in accordance with Part 91 of Act No. 451 of the Public Acts of 1994, as amended, if otherwise required by law. The Developer shall install stormwater management facilities and shall phase the Development activities so as to prevent construction site stormwater runoff and off-site sedimentation. During all construction activities on the Development site, Cascade Charter Township may inspect the Development site to ensure compliance with the approved construction site runoff controls.

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Sec. 2.06 Performance guarantee

(1) Cascade Charter Township shall not approve a Stormwater Permit until the Developer submits, a letter of credit or other performance guarantee to Cascade Charter Township, in a form and amount satisfactory to Cascade Charter Township, a letter of credit or other performance guarantee to ensure the timely and satisfactory construction of all approved stormwater management facilities and to complete site Grading in accordance with the approved drainage Plan. Upon 1) certification by a registered professional engineer that the stormwater management facilities have been completed in accordance with the approved drainage Plan including, but not limited to, the implementation Plan required to be submitted in Section 2.03, and 2) receipt of construction record drawings meeting the minimum requirements of Local Government or the County

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Drain Commissioner, Cascade Charter Township may release the letter of credit, or other performance guarantee subject to final Cascade Charter Township acceptance and approval.

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- (2) Except as provided in subsection (3), the amount of the performance guarantee shall be \$10,000, unless Cascade Charter Township reasonably determines that a greater amount is appropriate, in which case the basis for such determination shall be provided to the Developer in writing. In determining whether an amount greater than \$10,000 is appropriate, Cascade Charter Township shall consider the size and type of the Development, the size and type of the on-site stormwater system, and the nature of the off-site stormwater management facilities the Development will utilize.

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- (3) Cascade Charter Township [planner][zoning administrator] Planning Commission may reduce or waive the amount of the performance guarantee for a Development that will not increase the percentage of Impervious Surface of the Development site by more than ten percent (10%) and in accordance with those factors set forth in subsection (2).

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- (4) This ordinance shall not be construed or interpreted as relieving a Developer of its obligation to pay all costs associated with on-site private stormwater management facilities as well as those costs arising from the need to make other drainage improvements in order to reduce a Development's impact on a drain consistent with adopted design standards.

Sec. 2.07 Certificate of Occupancy

No final certificate of occupancy shall be issued to a Development until stormwater management facilities have been completed in accordance with the approved drainage Plan; provided, however, Cascade Charter Township may issue a certificate of occupancy if an acceptable letter of credit or other performance guarantee has been submitted to Cascade Charter Township, for the timely and satisfactory construction of all stormwater management facilities and site Grading in accordance with the approved drainage Plan.

Sec. 2.08 No Change in Approved Facilities

Stormwater management facilities, after construction and approval, shall be maintained in good operational condition, in accordance with the approved drainage Plan, and shall not be subsequently altered, revised or replaced except in accordance with the approved drainage Plan, or in accordance with approved amendments or revisions to that Plan.

771 **Sec. 2.09 Terms and Conditions of Permits**

772
773 In granting a Stormwater Permit, Cascade Charter Township may impose such 774
775 terms and conditions as are reasonably necessary to effectuate the purposes of
this ordinance. A Developer shall comply with such terms and conditions.

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776 **Article III – Stormwater System, Floodplain and Other Standards, Soil Erosion**
777 **Control**

778
779 **Sec. 3.01 Management of and Responsibility for Stormwater System**

780
781 Cascade Charter Township is not responsible for providing drainage facilities on
782 private property for the management of stormwater on said property. It shall be
783 the responsibility of the Property Owner to provide for, and maintain, private
784 stormwater management facilities serving the property and to prevent or correct
785 the accumulation of debris that interferes with the drainage function of a Water
786 Body or the functioning of such drainage.

787
788 **Sec. 3.02 Stormwater System**

789 All stormwater management facilities shall be constructed and maintained in
790 accordance with all applicable federal, state and local ordinances, and rules and
791 regulations.

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794 **Sec. 3.03 Stormwater Discharge Rates and Volumes**

795 Cascade Charter Township has minimum design standards set forth in Article
796 VIII of this ordinance shall apply to all new Development and redevelopment
797 projects, including preventing or minimizing water quality impacts. Specific
798 exemptions are listed in the Stormwater Standards Manual.

800
801 **Sec. 3.04 Floodplain Standards**

802
803 (1) All new buildings and Substantial Improvements to existing buildings shall
804 be protected from Flood damage up to the Flood Protection Elevation
805 (FPE) and shall be in accordance with all applicable federal, state and
806 local ordinances, and rules and regulations. Floodway alteration in a
807 Local Floodplain shall be permitted only upon review and approval by the
808 **Cascade Charter Township**, in accordance with an approved drainage
809 Plan.

810
811 (2) A drainage Plan providing for the filling or alteration of a Floodway within a
812 local Floodplain shall include provisions for maintaining stability of the
813 banks of Streams or other water bodies. Establishing buffer zones is one
814 means of providing protection of the slopes and banks of water bodies.

815
816 (3) Within any required buffer zone, no earth change shall take place except
817 in accordance with the approved drainage Plan. Such a Plan may also
818 include provisions for the replacement of local Flood plain storage volume,
819 where such storage volume is lost or diminished as a result of approved
820 Development.

821
822 (4) Any earth change within a State-Regulated Floodplain shall only be
823 undertaken in accordance with any required state or federal Permit.

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- (a) **Advisability of Additional Flood Protection**
The degree of Flood protection required by this Ordinance is hereby found to be the minimum necessary and reasonable for regulatory purposes. Larger Floods may occur and higher Floodwater heights may occur than will be mitigated or controlled by compliance with these requirements. This Ordinance shall not be interpreted to imply or guarantee that areas outside the Floodway or the State-Regulated Floodplain or uses permitted within such areas, shall remain free from Flooding or Flood damage. Compliance with the terms of this Ordinance will not guarantee freedom from damage, injury or loss of life. This Ordinance shall not be interpreted or applied to create liability for Cascade Charter Township or any officer, agent or employee of Cascade Charter Township for any Flood or Flood related damage.

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Sec. 3.05 Soil Erosion and Sedimentation Control

- (1) All Persons who cause, in whole or in part, any earth change to occur shall provide Soil Erosion and sedimentation control so as to adequately prevent soils from being eroded and discharged or deposited onto adjacent properties or into a stormwater drainage system, a public street or right of way, Wetland, creek, Stream, Water Body, or Floodplain. All Development shall be in accordance with all applicable federal, state and local ordinances, rules and regulations.
- (2) During any earth change which exposes soil to an increased risk of erosion or sediment track-out, the Property Owner and other Persons causing or participating in the earth change shall do the following:
 - (a) Comply with the stormwater management standards of this ordinance.
 - (b) Obtain and comply with the terms of a Soil Erosion and sedimentation control Permit if required by law.
 - (c) Prevent damage to any public utilities or services within the limits of Grading and within any routes of travel or areas of work of construction equipment.
 - (d) Prevent damage to or impairment of any Water Body on or near the location of the earth change or affected thereby.
 - (e) Prevent damage to adjacent or nearby land.
 - (f) Apply for all required approvals or Permits prior to the commencement of work.

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- 871 (g) Proceed with the proposed work only in accordance with the approved
 872 Plans and in compliance with this ordinance and the Stormwater
 873 Standards Manual.
- 874 (h) Maintain all required Soil Erosion and sedimentation control measures,
 875 including but not limited to, measures required for compliance with
 876 the terms of this ordinance.
- 877 (i) Promptly remove all soil, sediment, debris, or other materials applied,
 878 dumped, tracked, or otherwise deposited on any lands, public
 879 streets, sidewalks, or other public ways or facilities, as directed by
 880 the regulatory agency issuing the Soil Erosion and sedimentation control
 881 Permit. Removal of all such soil, sediment, debris or other
 882 materials within twenty-four (24) hours shall be considered prima
 883 facie compliance with this requirement, unless such materials
 884 present an immediate hazard to public health and safety.
- 885 (j) Refrain from Grading lands at locations near or adjoining lands, public
 886 streets, sidewalks, alleys, or other public or private property without
 887 providing adequate support or other measures so as to protect
 888 such other lands, streets, sidewalks or other property from settling,
 889 cracking or sustaining other damage.
- 890 (k) The Property Owner shall have the Soil Erosion and sedimentation control
 891 measures inspected weekly and within twenty-four (24) hours of a
 892 rain event of sufficient quantity to cause runoff. The inspection for
 893 sites one (1) acre or greater shall be conducted by a MDEQ an EGLE
 894 certified Construction Site Stormwater Operator who shall maintain
 895 written inspection logs. Logs shall be made available to Cascade
 896 Charter Township upon request.

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902 **Sec. 3.06 Building Openings**

- 903 (1) No Building Opening shall be constructed below the following elevations:
- 904 (a) One foot above the Base Flood Elevation.
- 905 (b) One foot above the 100-year water surface hydraulic grade line of
 906 the stormwater system.
- 907 (c) The Building Opening established at the time of plat or
 908 Development approval and on file with the Cascade Charter
 909 Township
- 910 (2) No Lowest Floor shall be constructed below the following elevations:
- 911 (a) One foot above the highest known ground water elevation.

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(b) The lowest allowable floor established at the time of plat or development approval and on file with the Cascade Charter Township

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(3) A waiver from elevations stated in Section 3.05(1) may be granted by Cascade Charter Township following receipt of a certification from a registered professional engineer demonstrating that the proposed elevation does not pose a risk of Flooding.

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(4) Upon completion of construction of the structure's foundation and or slab on grade, a registered land surveyor shall certify any minimum Building Opening or Lowest Floor elevation specified by this ordinance. This certificate shall attest that the Building Opening or Lowest Floor elevation complies with the standards of this ordinance. The permittee for the building Permit shall submit the certificate to the Township/Municipal Building Inspections official prior to the commencement of framing and/or structural steel placement. If the surveyor should find that the minimum Building Opening or Lowest Floor elevation is below the elevation specified in Section 3.06(1) (a) through (c), that opening must be raised using a method that meets with the approval of Cascade Charter Township. After reconstruction, a registered land surveyor or engineer shall re-certify that the minimum Building Opening or Lowest Floor elevation complies with the standards of this ordinance prior to the commencement of framing and or structural steel placement.

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Sec. 3.07 Sump Pump Discharge

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(1) Whenever building footing drains are required or utilized, a direct connection between the footing drains and the storm sewer through a sump pump-check valve system, or a gravity pipe with a double flap gate valve for backflow prevention is required. The check valve system shall be installed on private property and maintained by the Property Owner property owner.

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(2) A stormwater lateral shall be provided for each parcel at the time of storm sewer construction. If no lateral is provided, the Property Owner shall discharge said water in such a manner as to not impact neighboring land or public streets. If a stormwater lateral does not exist, and it is technically feasible to construct one, the Property Owner may install one at their expense. Any work to be conducted within the right-of-way must be expressly authorized by Cascade Charter Township

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(3) The Property Owner property owner assumes all risks associated with connecting directly into the storm sewer system. The requirements outlined in subsection (1) of this section (3.07) are the minimum required for Cascade Charter Township to allow a Property Owner to connect a foundation drain to the storm sewer system. Additional measures may be considered to reduce the risk of storm sewer backups, such as the

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967 inclusion of a physical air gap between the residential stormwater 968
969 discharge line and the public storm sewer system. All backflow prevention
Property Owner.

971 (4) Stormwater runoff shall not be redirected or infiltrated within the influence
972 of footing drains.
973

974 (5) None of the requirements of this section (3.07) shall be interpreted to
975 require a Property Owner to connect into the storm sewer system.
976

977 (6) If a storm sewer connection is not utilized, foundation drain outlets shall
978 comply with Cascade Charter Township Code of Ordinances.
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981 **Article IV – Prohibitions and Exemptions**

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983 **Sec. 4.01 Prohibited Discharges**

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985 (1) No Person shall discharge to a Water Body, directly or indirectly, any
986 substance other than stormwater or an exempted discharge. Any Person
987 discharging stormwater shall effectively prevent Pollutants from being
988 discharged with the stormwater, except in accordance with BMPs.

989

990 (2) Cascade Charter Township is authorized to require Dischargers to
991 implement pollution prevention measures, utilizing BMPs as necessary, to
992 prevent or reduce the discharge of Pollutants into Cascade Charter
993 Township's stormwater drainage system.

994

995 (3) ~~[/Pollutants prohibited/]~~No Person shall discharge or cause to be
996 discharged into Cascade Charter Township storm drain system or
997 watercourses any materials, including, but not limited to, Pollutants, or
998 water containing any Pollutants that cause or contribute to a violation of
999 applicable water quality standards other than stormwater. The
1000 commencement, conduct, or continuance of any Illicit Discharge to the
1001 Storm Drain system is prohibited except for discharges authorized by the
1002 Cascade Charter Township as being necessary to protect public health
1003 and safety.

1004

1005 (4) **Prohibition of Illicit Connections**

1006 (a) The construction, use, maintenance, or continued existence of Illicit
1007 Connections to the MS4 is prohibited.

1008 (b) This prohibition expressly includes, without limitation, Illicit
1009 Connections made in the past, regardless of whether the connection
1010 was permissible under law or practices applicable or prevailing at the
1011 time of connection.

1012 (c) Without limitation, a Person is considered to be in violation of this
1013 Ordinance if the Person connects a line conveying Wastewater to the
1014 MS4, or allows such a connection to continue.

1015 (5) ~~[/Exceptions/]~~The prohibitions of this section shall not apply to any
1016 nonstormwater discharge permitted under an NPDES Permit, waiver, or
1017 waste discharge order issued to the Discharger and administered under
1018 the authority of the ~~[/Federal Environmental Protection Agency/]~~EPA, provided,
1019 that the discharge is in full compliance with all requirements of the Permit,
1020 waiver, or order and other applicable laws and regulations, and provided
1021 that written approval has been granted for any discharge to the MS4.

1022

1023 **Sec. 4.02 Exempted Discharges**

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1025 (1) The following non-stormwater discharges shall be exempted from the
1026 requirement of this Article, provided that they do not result in a violation of
1027 State of Michigan ~~[/w/]~~Water ~~[/e/]~~Quality ~~[/s/]~~Standards:

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1029 Water supply line flushing
 1030 Landscape irrigation
 1031 Diverted Stream flows
 1032 Rising ground water
 1033 Uncontaminated ground water infiltration to Storm Drains
 1034 Uncontaminated Pumped Ground Water
 1035 Discharges from potable water sources
 1036 Foundation drains
 1037 Air conditioning condensate
 1038 Individual residential car washing
 1039 Dechlorinated swimming pool water
 1040 Street washwater
 1041 Discharges or flows from emergency fire fighting activities
 1042 Discharges for which a specific federal or state Permit has been issued.

- (2) None of the above exemptions eliminate the need to provide appropriate pollution control or pollution prevention measures required under this Ordinance or under any other Federal or State Law, rule or regulation.

Sec. 4.03 Interference with Natural or Artificial Drains

- (1) It shall be unlawful for any Person to stop, fill, dam, confine, pave, alter the course of, or otherwise interfere with any natural or constructed drain, ditch, swale, culvert, Water Body, Floodplain, or Flood prone area without first submitting a drainage Plan to Cascade Charter Township and receiving approval of that Plan. Any deviation from the approved Plan is a violation of this ordinance. This section shall not prohibit, however, necessary emergency action so as to prevent or mitigate drainage that would be injurious to the environment, the public health, safety, or welfare.

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- (2) No filling, blocking, fencing or above-surface vegetation planting shall take place within a Floodway.

- (3) No shrubs or trees shall be planted below the top of the bank of a Water Body.

- (4) For an overland flow-way:

(a) Silt screen fences shall not be permitted below the top of the bank of a Water Body.

(b) Chain link fences shall be permitted if Cascade Charter Township determines that the fence will not obstruct or divert the flow of water.

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(c) If a fence is removed by Cascade Charter Township for drain access or drain maintenance, the fence shall be replaced by the owner of the fence at the owner's expense.

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- (5) Shrubs, trees or other above-ground vegetation shall not be planted over the top of an underground storm sewer or over the top of the easement within which the storm sewer has been installed.

Sec. 4.04 Storage of Materials in Drainageway

It shall be unlawful for any Person to store, stockpile or dispose of any hazardous, toxic, or non-toxic material including but not limited to chemicals, explosives, buoyant materials, yard wastes, log and brush piles, unsecured landscaping materials, play or work sheds, animal wastes, fertilizers, flammable liquids and Pollutants in an overland flow-way, drainage system or a Floodplain unless adequate protection and or containment has been provided to prevent such materials from entering, diverting or blocking Cascade Charter Township drainage system, except as specifically permitted by State and Federal Law.

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Article V – Inspection, Monitoring, Reporting, and Recordkeeping.

Sec. 5.01 Inspection and Sampling

To assure compliance with the standards outlined in Article VIII, Cascade Charter Township may inspect and/or obtain stormwater samples from stormwater management facilities of any Discharger to determine compliance with the requirements of this ordinance. Upon request, the Discharger shall allow Cascade Charter Township's properly identified representative to enter upon the premises of the Discharger at all hours necessary for the purposes of such inspection or sampling absent exigent circumstances. Cascade Charter Township shall make a reasonable effort to provide the Discharger with advance notice of such inspection and/or sampling. Unreasonable delays in allowing access to a Discharger's facility is a violation of this Ordinance. As a condition of the issuance of any Permit in accordance with this ordinance, a the permittee shall be deemed to have consented to Cascade Charter Township's exercise of its right to place on the Discharger's property the equipment or devices used for such sampling or inspection under this Ordinance

Sec. 5.02 Stormwater Monitoring Facilities

A Discharger of stormwater runoff shall install and operate equipment or devices for the monitoring of stormwater runoff, at its own expense, so as to provide for inspection, sampling, and flow measurement of each discharge to a Water Body or a Stormwater Management Facility, when directed in writing to do so by Cascade Charter Township. Cascade Charter Township may require a Discharger to provide and operate such equipment and devices if it is necessary or appropriate for the inspection, sampling and flow measurement of discharges in order to determine whether adverse effects from or as a result of such discharges may occur. All such equipment and devices for the inspection, sampling and flow measurement of discharges shall be installed and maintained in accordance with applicable laws, ordinances and regulations.

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Sec. 5.03 Accidental Discharges

- (1) Any Discharger who accidentally discharges into a Water Body any substance other than stormwater or an exempted discharge shall immediately inform Cascade Charter Township concerning the discharge. If such information is given orally, a written report concerning the discharge shall be filed with Cascade Charter Township within five (5) days. The written report shall specify:
 - (a) The composition of the discharge and the cause thereof.
 - (b) The exact date, time, and estimated volume of the discharge.
 - (c) All measures taken to date to clean up the accidental discharge, and all measures proposed to be taken to reduce and prevent any recurrence.

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1145 (d) The name and telephone number of the Person making the report,
1146 and the name of a Person who may be contacted for additional
1147 information on the matter.

1148
1149 (2) A properly-reported accidental discharge shall be an affirmative defense to
1150 a civil infraction proceeding brought under this ordinance against a
1151 Discharger for such discharge. It shall not, however, be a defense to a
1152 legal action brought to obtain an injunction, to obtain recovery of costs or
1153 to obtain other relief as a result of or arising out of the discharge. A
1154 discharge shall be considered properly reported only if the Discharger
1155 complies with all the requirements of Section 5.03(1).
1156

1157 **Sec. 5.04 Record Keeping Requirement**
1158

1159 Any Person subject to this ordinance shall retain and preserve for no less than
1160 three (3) years any and all books, drawings, Plans, prints, documents,
1161 memoranda, reports, correspondence and records, including records on
1162 magnetic or electronic media and any and all summaries of such records, relating
1163 to monitoring, sampling and chemical analysis of any discharge or stormwater
1164 runoff from any property.
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1166 **Article VI – Enforcement**

1167 **Sec. 6.01 Sanctions for Violation**

1169 (1) Any Person violating any provision of this ordinance shall be responsible
1170 for a municipal civil infraction and subject to a fine of not less than
1171 500
1172 \$ 500 for a first offense, and not less than \$ _____ for a

1173 subsequent offense, plus costs, damages, expenses, and other sanctions
1174 as authorized under Chapter 87 of the Revised Judicature Act of 1961 and
1175 other applicable laws, including, without limitation, equitable relief; provided,
1176 however, that the violation stated in Section 6.01(2) shall be a
1177 misdemeanor. Each day such violation occurs or continues shall be deemed
1178 a separate offense and shall make the violator liable for the imposition of a
1179 fine for each day. The rights and remedies provided for in this section are
1180 cumulative and in addition to any other remedies provided by law. An
1181 admission or determination of responsibility shall not exempt the offender
1182 from compliance with the requirements of this ordinance.

1183 For purposes of this section, "subsequent offense" means a violation of the
1184 provisions of this ordinance committed by the same Person within 12
1185 months of a previous violation of the same provision of this ordinance for
1186 which said Person admitted responsibility or was adjudicated to be
1187 responsible.

1188 Cascade Charter Township ~~[zoning administrator, building inspector,
1189 enforcement officer, etc.]~~ Manager of duly appointed designee is authorized
1190 to issue municipal civil infraction citations for a violation of any provision of
1191 this ordinance.

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1192 (2) Any Person who neglects or fails to comply with a stop work order issued
1193 under Section 6.02 shall, upon conviction, be guilty of a misdemeanor,
1194 punishable by a fine of not more than \$500 or imprisonment for not more
1195 than 93 days, or both such fine and imprisonment, and such Person shall
1196 also pay such costs of prosecution and other charges as may be imposed
1197 in the discretion of the court.

1201 (3) Any Person who aids or abets a Person in a violation of this ordinance shall
1202 be subject to the sanctions provided in this section.

1203 **Sec. 6.02 Stop Work Order**

1204 Where there is work in progress that causes or constitutes in whole or in part, a
1205 violation of any provision of this ordinance, Cascade Charter Township is
1206 authorized to issue a Stop Work Order to prevent further or continuing violations
1207 or adverse effects. All Persons to whom a stop work order is directed, or who
1208 are involved in any way with the work or matter described in a stop work order
1209 shall fully and promptly comply therewith.

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1210 **Sec. 6.03 Failure to Comply; Completion**

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1215 In addition to any other remedies, should any owner fail to comply with the
1216 provisions of this ordinance, Cascade Charter Township may, after giving
1217 reasonable notice and an opportunity for compliance, have the necessary work
1218 done, and the owner shall be obligated to promptly reimburse Cascade Charter
1219 Township for all costs of such work. Without limiting the foregoing, a failure to
1220 comply or otherwise bring property into compliance with other violation of this
1221 ordinance shall be deemed a public nuisance and shall be subject to abatement,
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1223 **Sec. 6.04 Emergency Measures**

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1225 When emergency measures are necessary to protect public safety, health and
1226 welfare, and/or to prevent loss of life, injury or damage to property, Cascade
1227 Charter Township is authorized to carry out or arrange for all such emergency
1228 measures. Property owners shall be responsible for the cost of such measures
1229 made necessary as a result of a violation of this ordinance, and shall promptly
1230 reimburse Cascade Charter Township for all of such costs.
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1232 **Sec. 6.05 Cost Recovery for Damage to Storm Drain System**

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1234 A Discharger shall be liable for all costs incurred by Cascade Charter Township as
1235 the result of causing a discharge that produces a deposit or obstruction, or causes
1236 damage to, or impairs a Storm Drain, or violates any of the provisions of this
1237 ordinance. Costs include, but are not limited to, those penalties levied by the EPA
1238 or MDEQ for violation of an NPDES Permit, attorney fees, and other costs and
1239 expenses.
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1241 **Sec. 6.06 Collection of Costs; Lien**

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1243 To the extent permitted by law, service charge incurred by Cascade Charter
1244 Township and the Drain Commissioner including, without limitation, applicable
1245 charges incurred pursuant to Sections 6.02, 6.03, 6.04 and 6.05 may be collected
1246 by Cascade Charter Township or Drain Commissioner in any manner authorized
1247 by law including, but not limited to, all remedies authorized by Act No. 94 of the
1248 Public Acts of 1933, as amended. When applicable, said costs shall be a lien on
1249 the premises which shall be enforceable in accordance with Act No. 94 of the
1250 Public Acts of 1933, as amended from time to time or as otherwise authorized by
1251 law with any such charges which are delinquent for six (6) months or more may be
1252 certified annually to Cascade Charter Township Treasurer who shall enter the lien
1253 on the next tax roll against the premises and the costs shall be collected and the
1254 lien shall be enforced in the same manner as provided for in the collection of taxes
1255 assessed upon the roll and the enforcement of a lien for taxes. .
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1257 **Sec. 6.07 Appeals**

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1259 Any Person as to whom any provision of this ordinance has been applied may
1260 appeal in writing, not later than 30 days after the action or decision being
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appealed from, to Cascade Charter Township **body** Board of Trustees the action or decision whereby any such provision was so applied. Such appeal shall identify the matter being appealed, and the basis for the appeal. Cascade Charter Township shall Board of Trustees shall consider the appeal at a public hearing and shall affirm, reject or modify the action being appealed based on the standards set forth in this ordinance. Cascade Charter Township **body** Board of Trustees may impose reasonable conditions on an affirmative decision in an appeal. Cascade Charter Township Board of Trustees shall make its decision in writing and shall furnish a copy of the decision to the Person making the appeal. In considering any such appeal, Cascade Charter Township Board of Trustees may consider the recommendations of Cascade Charter Township Engineer and the comments of other Persons having knowledge of the matter. In considering any such appeal, Cascade Charter Township Board of Trustees may grant a variance from the terms of this ordinance so as to provide relief, in whole or in part, from the action being appealed, but only upon finding that the following requirements are satisfied:

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- (1) The application of the ordinance provisions being appealed will present or cause practical difficulties for a Development or Development site; provided, however, that practical difficulties shall not include the need for the Developer to incur additional reasonable expenses in order to comply with the ordinance; and
- (2) The granting of the relief requested will not substantially prevent the goals and purposes sought to be accomplished by this ordinance, nor result in less effective management of stormwater runoff.

Sec. 6.08 Suspension of MS4 Access

- (1) The Local Government may, without prior notice, suspend a Person's discharge access to the MS4 when such suspension is necessary to stop an actual or threatened discharge that presents or may present imminent and substantial danger to the environment, or to the health or welfare of Persons or the MS4. If the Person fails to comply with a suspension order issued in an emergency, the Local Government may take such steps as deemed necessary to prevent or minimize damage to the MS4 or the environment, or to minimize danger to Persons. A **Person** person failing to comply with a suspension order pursuant to this section shall be liable for all cost incurred by Cascade Charter Township as the result of such failure to comply and a violation shall constitute a public nuisance.
- (2) Any Person discharging to the MS4 in violation of this Ordinance may have their MS4 access terminated if such termination would abate or reduce an Illicit Discharge. Cascade Charter Township will notify a violator of the proposed termination of its MS4 access. A Person violates this Ordinance if the Person reinstates MS4 access to a premise terminated pursuant to this section, without the prior approval of Cascade Charter Township.

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Article VII – Stormwater Easements and Maintenance Agreements

Sec. 7.01 Applicability of Requirements

The requirements of this Article concerning stormwater easements and maintenance agreements shall apply to all Persons required to submit a drainage Plan to Cascade Charter Township for review and approval.

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Sec. 7.02 Stormwater Management Easements

The Property Owner shall provide all stormwater management easements necessary to implement the approved drainage Plan and to otherwise comply with this ordinance in form and substance required by Cascade Charter Township and shall record such easements as directed by Cascade Charter Township. The easements shall assure access for proper inspection and maintenance of stormwater management facilities and shall provide adequate emergency Overland Flow-ways.

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Sec. 7.03 Maintenance Agreements

- (1) Maintenance Agreement Required. The Developer shall provide all stormwater maintenance agreements necessary to implement the approved drainage Plan to provide and require easements as necessary for implementation and to otherwise comply with this ordinance in form and substance as required by Cascade Charter Township, and shall record such agreements as directed by Cascade Charter Township. The ~~M~~Maintenance ~~a~~Agreements shall, among other matters, assure access for proper inspection and maintenance or corrective actions of stormwater BMPs, including emergency Overland Flow-ways, and include provisions for tracking the transfer of operation and maintenance responsibility to ensure the performance standards are met in perpetuity.
- (2) Maintenance Agreement Provisions.
 - (a) The maintenance agreement shall include a maintenance plan and schedule for routine, emergency and long-term maintenance of all structural and vegetative stormwater BMPs installed and implemented to meet the performance standards, with a detailed annual estimated budget for the initial three years, and a clear statement that only future maintenance activities in accordance with the maintenance agreement Plan shall be permitted without the necessity of securing new Permits.
 - (b) Written notice and submittal of maintenance documentation shall be provided to Cascade Charter Township by the Property Owner at the interval set forth in the maintenance agreement and subject to the provisions of Sections 5-01 through 6-07.

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- (c) If it has been found by Cascade Charter Township, following notice and an opportunity to be heard by the Property Owner, that there has been a material failure or refusal to undertake maintenance as required under this ordinance and/or as required in the approved maintenance agreement as required hereunder, Cascade Charter Township shall then be authorized, but not required, to hire an entity with qualifications and experience in the subject matter to undertake the monitoring and maintenance required, in which event the Property Owner shall be obligated to advance or reimburse payment for all costs and expenses associated with such monitoring and maintenance, together with a reasonable administrative fee. The maintenance agreement required under this Ordinance shall contain a provision spelling out the requirements and, if the applicant objects in any respect to such provision or the underlying rights and obligations, such objection shall be resolved prior to the commencement of construction of the proposed Development on the property.

(d) The maintenance agreement and any amendment to the maintenance agreement and its exhibits shall be recorded.

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Sec. 7.04 Establishment of County Drains

Prior to final approval of a platted subdivision, all stormwater management facilities for platted subdivisions shall be established as county drains, as authorized in Section 433, Ordinance 18 of the Michigan Drain Code (P.A. 40 of 1956, as amended) for long-term maintenance.

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Article VIII – Performance and Design Standards

Sec. 8.01 Design Standards

Stormwater BMPs shall be designed to manage stormwater flow within the available capacity of the downstream conveyance system as determined by Cascade Charter Township.

In addition, stormwater BMPs shall be designed to meet Performance Standards as described in Section 8.02. Stormwater system design shall be in accordance with the latest version the "Stormwater Standards" manual published by Cascade Charter Township.

Sec. 8.02 Performance Standards

In order to achieve the goals and purposes of this ordinance, the following stormwater management performance standards are hereby established.

- (1) **Water Quality Treatment.** Treat the calculated site runoff for the entire Project Site from the 90 percent annual non-exceedance storm, which is approximately equal to 1-inch of rain (i.e. on average, 90 percent of the storms in a given year produce 1-inch of rainfall or less). The treatment volume specified is based on capturing and treating the volume of stormwater that is the first to runoff in a storm and expected to contain the majority of Pollutants. This volume of runoff is often referred to as the "first flush." The water quality treatment standard is required for all sites.
 - (a) **Total Suspended Solids (TSS).** The methods selected to treat the volume of water calculated for the Water Quality Treatment performance standard shall be designed on a site-specific basis to achieve either a minimum of 80 percent removal of TSS, as compared with uncontrolled runoff, or a discharge concentration of TSS that does not exceed 80 milligrams per liter (mg/l). This performance standard is based on TSS as a surrogate for other Pollutants normally found in stormwater runoff. Control of TSS to meet this standard is expected to achieve control of other Pollutants to an acceptable level that protects water quality.
- (2) **Channel Protection.** Maintain the post-development Project Site runoff volume and peak flow rate at or below pre-development levels for all storms up to the 2-year, 24-hour event. At a minimum, pre-development is defined as the last land use prior to the planned new Development or redevelopment. The channel protection standard is required for stormwater discharges to surface waters or the MS4.

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(3) Flood Control. Control the volume of site runoff from the Flood control rainfall event with a maximum allowable release rate to reduce the potential for property damage from overbank Flooding and preserve existing Floodplains. The Flood control event and maximum allowable release rate shall be determined by Cascade Charter Township. The Flood control standard is required for all sites.

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(a) Overflow Routes. Acceptable overflow routes for the 100-year Flood shall be identified for the site and for downstream areas between the site and the nearest acceptable Floodway or outlet. Stormwater conveyance systems are usually designed to handle flows generated by the 10-year storm. When larger storms generate higher flows, the conveyance system is expected to surcharge resulting in stormwater accumulating on the surface of the ground. Gravity will cause such stormwater to flow overland to lower elevations. By carefully managing the shape of the land surface such overland stormwater flow can be directed to locations that will not cause property damage. Adequate emergency Overland Flow-ways will direct stormwater flows generated by the 100-year storm to avoid damage to structures and facilities.

(4) Site-Specific Requirements

(a) Pretreatment. Pretreatment of site runoff is required on a site specific basis prior to discharging to certain stormwater BMPs. Pretreatment provides for the removal of fine sediment, trash and debris, and preserves the longevity and function of the BMP.

(b) Hot Spots and Groundwater Contamination. Some land use activities have a potentially greater risk of polluted runoff than others. Project sites with these types of activities are referred to as "hot spots" and include uses such as gas stations, commercial vehicle maintenance and repair, auto recyclers, recycling centers, and scrap yards. Hot spots also include areas with the potential for contaminating public water supply intakes. Pretreatment of stormwater runoff to address Pollutants associated with hot spots is required for the site. Stormwater management strategies and BMPs that reduce the potential to mobilize existing soil and groundwater contaminants, or that capture and treat stormwater runoff and/or accidental spills to protect groundwater or nearby surface waters are required.

(c) Coldwater Streams. Stormwater management strategies and BMPs that minimize thermal impacts from site runoff and maximize groundwater recharge are required for sites with a surface water discharge to a coldwater Stream as determined by the Michigan Department of Natural Resources.

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Sec. 8.03 Alternative Approach for Channel Protection

In many cases, infiltration will likely be used as the primary means of Retention. It is not, however, the sole means of providing onsite Retention, and the developer must include consideration of stormwater reuse, interception, evapo- transpiration, and other vegetative (non-structural) BMPs at the Project Site. Site constraints that limit the use of infiltration may include:

- (1) Poorly draining soils (<0.24 inches per hour; typically hydrologic soil groups C and D).
- (2) Bedrock.
- (3) High groundwater, or the potential of mounded groundwater to impair other uses.
- (4) Wellhead protection areas.
- (5) Stormwater hot spots.
- (6) [Sites subject to Part 201 and Part 213 sites of Act No. 451 of the Public Acts of 1994, as amended](#), and areas of soil or groundwater contamination.

Cascade Charter Township may grant a waiver of the on-site Retention criteria for channel protection described in Section 8.01(2), and allow an alternative approach to meet the channel protection performance standard if the developer demonstrates that site constraints preclude sufficient Retention onsite. If a waiver is granted, the developer must meet the following extended detention criteria:

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- (1) Extended Detention. Detain the portion of the channel protection volume unable to be retained onsite for a minimum of 24-hours with a maximum release rate no greater than the existing 1-year peak discharge, and a drawdown time no greater than 72 hours. A waiver from the Local Government must be granted to use this alternative approach.

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Sec. 8.04 Resolution to Implement Performance and Design Standards

The Board of Trustees of Cascade Charter Township may adopt a resolution establishing more detailed design and performance standards for stormwater management facilities, consistent with the terms of this ordinance, and in order to further implement its goals and purposes.

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Article IX – Other Matters

Sec. 9.01 Interpretation

Words and phrases in this ordinance shall be construed according to their common and accepted meanings, except that words and phrases defined in Section 1.05 shall be construed according to the respective definitions given in that section. Technical words and technical phrases that are not defined in this ordinance but which have acquired particular meanings in law or in technical usage shall be construed according to such meanings.

Sec. 9.02 Catch-Line Headings

The catch-line headings of the articles and sections of this ordinance are intended for convenience only, and shall not be construed as affecting the meaning or interpretation of the text of the articles or sections to which they may refer.

Sec. 9.03 Severability

The provisions of this ordinance are hereby declared to be severable, and if any part or provision of this ordinance should be declared invalid or unenforceable by any court of competent jurisdiction, such invalidity or unenforceability shall not affect any other part or provision of the ordinance.

Sec. 9.04 Other Ordinances

This ordinance shall be in addition to other ordinances of Cascade Charter Township, and shall not be deemed to repeal or replace other ordinances or parts thereof except to the extent that such repeal is specifically provided for in this Article. In the situation where a different standard is applicable from another ordinance, the stricter standard shall apply.

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Sec. 9.05 Effective Date

This ordinance shall become effective [redacted], following its publication or following the publication of a summary of its provisions in a local newspaper of general circulation.

Sec. 9.06 Repeal

Ordinance No. 7 of 2002 and as amended Ordinance No. 2 of 2008 , titled Storm Water Ordinance for Cascade Charter Township Kent County, Michigan, is hereby repealed, as of the effective date of this ordinance.

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This ordinance was adopted _____, by the Township Board,
and made effective _____.

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Site Development and Storm Water Runoff Facility Maintenance Agreement and Accompanying Easement (for Private Developments)

This Site Development and Stormwater Runoff Facility Maintenance Agreement and Accompanying Easement (the "Agreement") is executed on the ____ day of _____, 20____, between (Community Name) Cascade Charter Township (the "eCommunity"), whose address is (Community address) 2865 Thornhills Avenue, SE, Grand Rapids, MI 49546; and _____ (Owner) (the "Owner"), whose address is _____.

[Owners Name], as "Owner(s)" of the property described below, in accordance with the Community Stormwater Ordinance **[cite section]** agrees to install and maintain stormwater management practices hereinafter referred to as the "Stormwater Management System" on the subject property in accordance with approved plans and conditions. The Owner further agrees to the terms stated in this document to ensure that the Stormwater Management System continues serving the intended function in perpetuity. This Agreement includes the following exhibits:

- Exhibit A:** Legal description of the real estate for which this Agreement applies ("Property").
- Exhibit B:** Location map(s) showing a location of the Property and an accurate location of each stormwater management practice affected by this Agreement.
- Exhibit C:** Long-term Maintenance Plan ("Maintenance Plan") that prescribes those activities that must be carried out to maintain compliance with this Agreement.
- Exhibit D:** Inventory of approved stormwater runoff facilities

Note: After construction has been verified and accepted by the Community for the Stormwater Management System, this Agreement and all exhibits shall be recorded by the Owner and a copy of the recorded document provided to the name of Community.

Through this Agreement, the Owner(s) hereby subjects the Property to the following covenants, conditions, and restrictions:

1. The Owner(s) shall be solely responsible for the installation, maintenance and repair of the Stormwater Management System, drainage easements and associated landscaping identified in Exhibit B in accordance with the Maintenance Plan (Exhibit C).
2. No alterations or changes to the storm water system identified in Exhibit B or reflected in Exhibit C shall be permitted unless they are deemed to comply with this Agreement and are approved in writing by the Community and recorded as applicable.
3. The Owner(s), at its expense, shall secure from any affected owners of land all easements and

releases of rights-of-way necessary for utilization of the Stormwater Management System identified in Exhibit B and shall record them with the Register of Deeds. These easements and releases of rights-of-way shall not be altered, amended, vacated, released or abandoned without prior written approval of the Community.

4. The Owner(s) hereby conveys to the Community, its authorized agents and employees an easement over, on and in the property described in Exhibit A to enter upon the property for the purpose of access to the Stormwater Management System for the inspection, maintenance and repair thereof, should the Owner(s) fail to properly inspect, maintain and repair the practices.
5. The Owner(s) shall retain the services of a qualified inspector (as described in Exhibit C – Maintenance Requirement 1) to operate and ensure the maintenance of the storm water system identified in Exhibit B in accordance with the Maintenance Plan (Exhibit C).
6. ~~Upon request by the Community~~On the third anniversary of the Agreement and every three years thereafter, the Owner(s) shall provide to the Community records (logs, invoices, reports, data, etc.) of inspections, maintenance, and repair of the Stormwater Management System identified in Exhibit B in accordance with the Maintenance Plan ~~every 3 years~~.
7. Upon written notification by the Community or their designee of required maintenance or repairs, the Owner(s) shall complete the specified maintenance or repairs within a reasonable time frame determined by the Community. The Owner(s) shall be liable for the failure to undertake any maintenance or repairs so that the public health, safety and welfare shall not be endangered nor road improvements damaged.
8. If the Owner(s) does not keep the storm water management practices in reasonable order and condition, or complete maintenance activities in accordance with the Maintenance Plan contained in Exhibit C, or the reporting required above, or the required maintenance or repairs within the specified time frames, the Community is authorized, but not required, to perform the specified inspections, maintenance or repairs in order to preserve the intended functions of the Stormwater Management System and prevent the Stormwater Management System from becoming a threat to public health, safety, general welfare or the environment. Exercise of the Community's right is subject to providing the Owner with notice of not less than thirty (30) days of an opportunity to be heard on the Community's determination and possible action through the appeal provisions in the Community Stormwater Ordinance. In the case of an emergency, as determined by the Community, no notice shall be required prior to the Community performing emergency maintenance or repairs. The Community may levy the costs and expenses of such inspections, maintenance or repairs plus a ten percent (10%) administrative fee against the Owner(s). The Community at the time of entering upon said Property for the purpose of maintenance or repair of the Stormwater Management System may file a notice of lien in the office of the Register of Deeds of the Community upon the property affected by the lien. If said costs and expenses are not paid by the Owner(s), the Community may pursue the collection of same through appropriate court actions and in such a case, the Owner(s) shall pay in addition to said costs and expenses all costs of litigation, including attorney fees.
9. The Owner(s) agrees that this Agreement shall be recorded and that the land described in Exhibit A shall be subject to the covenants and obligations contained herein, and this Agreement shall bind all current and future owners transferee or lessees of the property.
10. The Owner(s) agrees in the event that the Property is sold, transferred, or leased to notify the Community of the sale transfer or lease and provide information to the new owner, operator, or lessee regarding proper inspection, maintenance and repair of the storm water management practices. The information shall accompany the first deed, transfer or lease and include Exhibits B and C and this Agreement. The notification and transfer of this information shall also be required with any subsequent sale, transfer or lease of the Property.
11. The Owner(s) agree that the rights, obligations and responsibilities hereunder shall commence upon execution of the Agreement. subject to right of Owner(s) to object to requirements, rights, obligation

and responsibilities, which objection(s) shall be resolved in accordance with appeal provisions of the Community Stormwater Ordinance, unless otherwise resolved informally with the Community.

12. The parties whose signatures appear below hereby represent and warrant that they have the authority and capacity to sign this Agreement and bind the respective parties hereto.
13. The Proprietor, its agents, representatives, successors and assigns shall defend, indemnify and hold the Community harmless from and against any claims, demands, actions, damages, injuries, costs or expenses of any nature whatsoever, hereinafter "Claims", fixed or contingent, known or unknown, arising out of or in any way connected with the design, construction, use, maintenance, repair or operation (or omissions in such regard) of the storm drainage system referred to in the permit as Exhibit C hereto, appurtenances, connections and attachments thereto which are the subject of this Agreement. This indemnity and hold harmless shall include any costs, expenses and attorney fees incurred by the Community in connection with such Claims or the enforcement of this Agreement.

The parties have executed this Agreement on the day and year first above written.

[Community-Name] Cascade Charter Township

Signature

Print Name

Title

State of Michigan

County of **Kent** (Must be county where the document was signed)

On this ____ day of _____, 20____, before me a Notary Public, personally appeared _____ (Print Name), the _____ (title), of the

[Community-Name] Cascade Charter Township, a Michigan municipal corporation, who, being first duly sworn, did say they signed this document on behalf of the City.

Signature

Print Name

Notary Public, _____ County, Michigan

My commission expires: _____

DEVELOPER: _____

Signature

Print Name

Title

State of Michigan
County of _____ (Must be county where the document was signed)

On this ____ day of _____, 20____, before me a Notary Public, personally appeared

(Print Name), the _____ (title), of

(Developer) a Michigan _____ (Type of Entity [company,
school, etc.]), who, being first duly sworn, did say they signed this document on behalf of said

(Type of Entity).

Signature

Print Name

Notary Public, _____ County, Michigan
My commission expires: _____

DRAFTED BY/AFTER RECORDING RETURN TO:
CONTACT NAME (e.g. Jane Doe)
MUNICIPALITY
ADDRESS

Exhibit A

PPN:

Legal Property Description:

Exhibit B
Map:

*Exhibit C
Maintenance Plan*

[PLAN TITLE]

*e.g. Stormwater Best Management Practice Operation and
Maintenance Plan*

Prepared for
[SITE NAME]

Prepared by
[NAME OF PREPARER]

[DATE]

Purpose

The purpose of this plan is to outline a long-term strategy to ensure regular inspection and proper long-term maintenance of stormwater best management practices at [SITE NAME].

Responsible Parties

List all persons that will be responsible for inspections and maintenance during and after construction. Include full contact information. Include a process for updating this list and ensuring that new responsible parties receive a copy of the plan. Provide this list of contacts to the municipality to keep on file with the maintenance agreement in case of emergency.

EXAMPLE

*Construction Supervisor
Joe Smith
333 Industrial Dr
Somewhere MI 99999
555-555-5555*

*Property Manager
Bob Smith
444 Marigold Ln
Someplace MI 99999
555-555-5555*

*Maintenance Supervisor
Mary Smith
555 Easy St*

Nowhere MI 99999
555-555-5555

Provide all responsible parties a copy of this plan. Keep a master copy of the plan on file in the office of the Property Manager. The Property Manager is responsible for updating this list and providing copies of the plan to new responsible parties. The Property Manager will notify all responsible parties of any changes to this list within 10 business days of the changes. Contractors hired for certain maintenance activities will demonstrate that their employees are properly trained in applicable inspection and maintenance procedures.

Maintenance Tasks and Schedules

This section is specific to the site and the BMPs. Include a section about emergency maintenance procedures or reference the location of other existing emergency procedures.

EXAMPLE
Inspections and routine maintenance will be conducted according to the following table:

BMP	Activity	Spring		Summer			Fall			Winter			
		M	A	M	J	J	A	S	O	N	D	J	F
Catch basins	Inspection*	X	X	X	X	X	X	X	X	X	X	X	X
	Inspection*	X	X	X	X	X	X	X	X	X	X	X	X
Bioswale	Inspection*												
	Pull weeds		X	X									
	Remove thatch	X											
Permeable pavers	Inspection*	X	X	X	X	X	X	X	X	X	X	X	X
	Sweeping to remove grass clippings and leaves			X	X	X	X	X	X	X			
Planter box	Inspection*												
	Pull weeds		X	X									
	Remove thatch	X											

*complete every other week using the attached inspection checklists [or in an appendix]
Complete minor corrective maintenance, such as debris removal, at the time of inspection and document it on the inspection form. When corrective maintenance is necessary, document it on the inspection form and schedule it within 30 days. When completed, document the corrective maintenance on the attached maintenance recordkeeping form [or in an appendix]. Keep all completed inspection and maintenance forms on file in the office of the Property Manager.

Solid Waste Handling Procedures

Properly handle and dispose of all solid waste removed from stormwater BMPs during the routine, corrective and emergency maintenance according to applicable laws and regulations. Dispose of trash in a proper trash receptacle and separate and sort recyclable items. To prevent the spread of weed seeds, bag and dispose of all weeds in the trash. Compost or properly dispose of thatch and other native plant materials with other yard waste. Include the following statement if the site is a non-household entity: Sediment and other materials removed from catch basins and any other stormwater BMP is classified as liquid hazardous waste. Handle and process this waste according to Part 121, Liquid Industrial By-Products of the Natural Resources and Environmental Protection Act. If the plan is for a household entity, then Part 121 does not apply, but properly dispose of sediment and other materials removed from catch basins and other BMPs and do not allow material to discharge into waters of the state. When in doubt, hire a certified pumper/hauler to clean catch basins and remove sediment from other BMPs. Hand remove small amounts of sediment in vegetated BMPs and redistributed in the landscape. However, if sediment is getting into a vegetated BMP, then the BMP is likely not functioning properly and needs corrective maintenance.

Recordkeeping

Immediately record all inspections and maintenance performed on the appropriate recordkeeping forms found in [SECTION, PAGE OR APPENDIX]. The person conducting the inspection or maintenance is responsible for filling out the form, scheduling or notifying the appropriate person that corrective maintenance needs to be scheduled and forwarding the completed form to the Property Manager.

Add any specific information regarding preferred methods of recordkeeping. Will hard copy forms be filled out by hand or will an electronic version be available? Do original hard copies need to be kept on file or are digital scans acceptable? How will the records be backed up, if at all?

Evaluation

The responsible parties will evaluate the effectiveness and efficiency of this plan an annual basis and update it accordingly. If updates are made, [the municipality] will be contacted and given an updated copy for their records.

Exhibit D

Inventory

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Stormwater infrastructure	Location on site	Size		
Catch Basin #1				
Bioswale #1				
Detention Pond #1				
Underground Storage Tank				

Type of Infrastructure	Quantity
Structural	
<i>Catch Basin</i>	<i>10</i>
Nonstructural	



CASCADE CHARTER TOWNSHIP

5920 Tahoe Dr. SE, Grand Rapids, Michigan 49546

Date: April 27, 2022
To: Supervisor Lesperance and Cascade Township Board
From: Benjamin Swayze, Township Manager
Subject: Modifications to the PFAS Interim Water Solutions Project

FACTS:

In 2021 the Township Board approved a program to provide interim clean water solutions to residents in the neighborhoods effected by PFAS. The two-tier program called for providing whole house filtration systems to the 40 houses that tested above the maximum contamination limit (MCL) for PFAS compounds. The program also called for bottled water service to be provided to all houses in the effected neighborhoods that had a PFAS detection but was not above the MCL. This amounted to approximately 164 houses. At the time, the Township allocated \$244,000 to the program.

The whole house filter program was launched in fall 2021. As of April 2022, 17 homes have elected to have the system installed. The agreement calls for the Township to cover the purchase, installation and maintenance of the system, up until the point that public water becomes available at the house. At that point the homeowner can elect to keep the system and take over the maintenance costs, or the Township will have the system removed. The anticipated cost per household, including purchase, installation, maintenance and removal is approximately \$8,500 per unit.

The bottled water program was implemented in early 2022. Invitations to participate in the program were delivered to approximately 164 households. As of April 2022, 72 households have signed up for program. With the average house utilizing 4-6 bottles per month the average bill to the township per month is approximately \$2,500.

At it's April meeting the Citizens PFAS Advisory Committee reviewed the program utilization to date. The Township has received requests from residents that live in the PFAS effected area but have not had a PFAS detection in their well to be included in the bottled water program. There are approximately 269 houses in the neighborhood on wells that have not had a PFAS detection but are scheduled to receive public water as part of the program.

ANALYSIS & CONCLUSIONS:

The citizens PFAS Committee has recommended that the Township Board extend the bottled water service program to all residents in the effected area, not just those that have experienced a PFAS detection in their well. Due to the nature of the contamination and the hydrology of the water source in the area, it is possible that wells the tested non-detect could test detect at a future date. Providing bottled water service to residents could provide piece of mind to those residents as they await public water service.

In addition, while Phase I of the project has been bid and contract has been awarded, supply chain issues could push the completion date of the project to 2023, further lengthening the time period until safe drinking water is provided to the residences.

FINANCIAL CONSIDERATIONS:

The Township Board had previously allocated \$244,000 to both tiers of the project. Given that 100% useage of both programs is not expected, it is possible that adding the additional households into the bottled water program would still fall into the amount allocated for the total program. Once the program has matured, staff will provide an updated cost analysis to the Township Board and a proposed budget amendment, if needed. It is estimated that each additional 70 residences that opt into the program will cost an additional \$2,500 per month

RECOMMENDED ACTION:

To consider modifications to the PFAS interim water solutions project