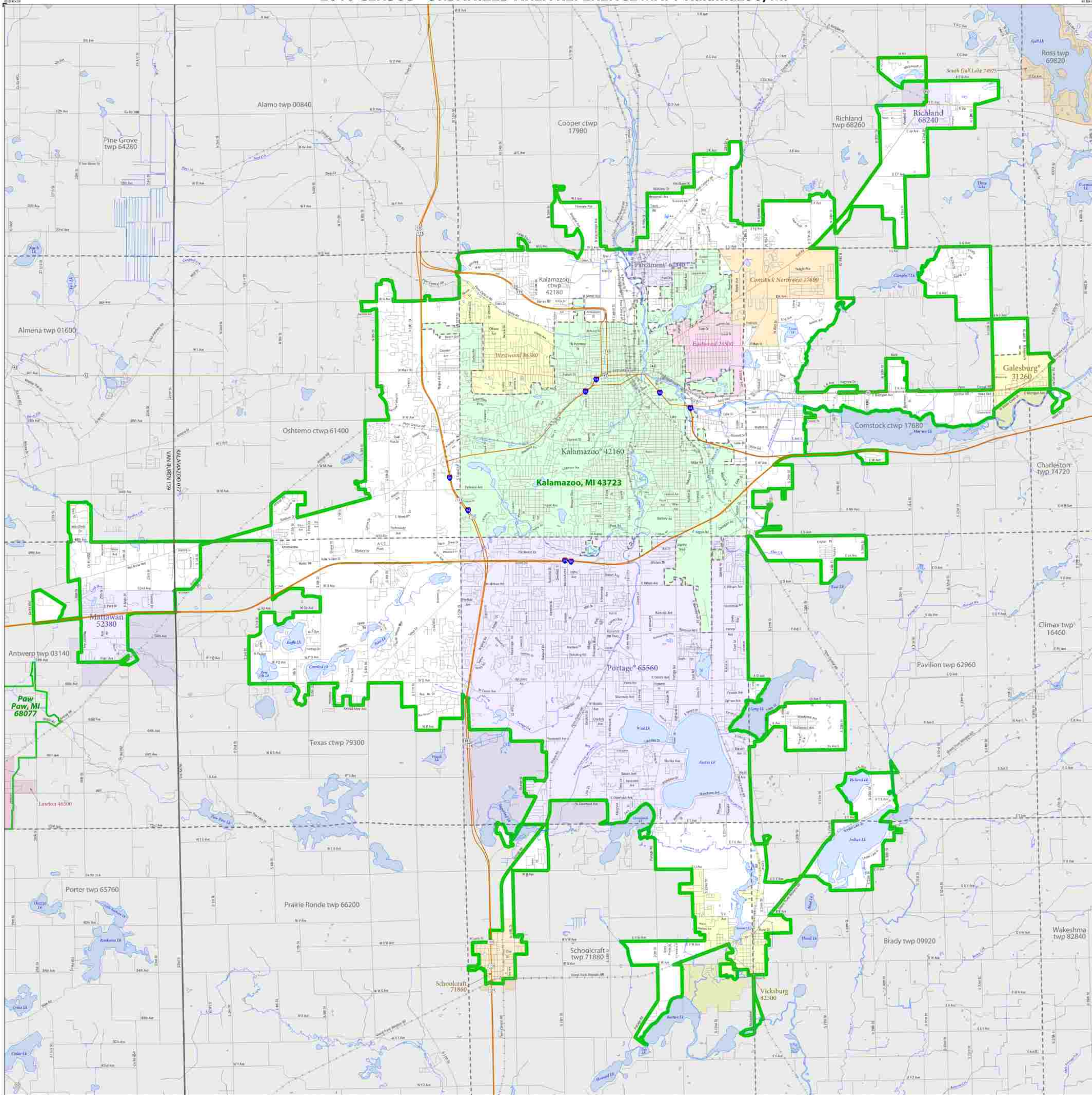


Section 4: Attachment A

2010 – Census – Urbanized Area Reference Map:
Kalamazoo, MI

2010 CENSUS - URBANIZED AREA REFERENCE MAP: Kalamazoo, MI



LEGEND

SYMBOL DESCRIPTION	SYMBOL	LABEL STYLE
International	--- ---	CANADA
Federal American Indian Reservation	L'ANSE RES 1880
Off-Reservation Trust Land	T1880
Urbanized Area	█	Dover, DE 24580
Urban Cluster	█	Toolee, VT 88057
State (or statistically equivalent entity)	---	NEW YORK 36
County (or statistically equivalent entity)	---	ERIE 029
State Civil Division (MCD) ^{1,2}	---	Bristol town 07485
Consolidated City	MILFORD 47500
Incorporated Place ^{1,3}	Davis 18100
Census Designated Place (CDP) ^{1,3}	Inline Village 35100

DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL
Interstate	— —	White body	□
U.S. Highway	— —	Military	— —
State Highway	— —	Outlets Subject Area	□
Other Road	— —	Supervisory	— —
Railroad	— —	Fencing	— —
Personal Mound	— —	Play	— —
Intercommunal Stream	— —		

Where international, state, county, and/or MCD boundaries coincide, the map shows the boundary symbol for only the highest ranking of these boundaries.

1 A "*" following an MCD name denotes a false MCD. A "*" following a place name indicates that a false MCD exists with the same name and FIPS code as the place; the false MCD label is not shown.

2 MCD boundaries are shown in the following states in which some or all MCDs function as general-purpose governmental units: Connecticut, Illinois, Indiana, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, and Wisconsin. (Note that Illinois and Nebraska have some counties covered by nongovernmental precincts and Missouri has most counties covered by nongovernmental townships.)

3 Place label color corresponds to the place fill color.

Label colors: Davis, Davis, Davis, Davis, Davis

SUBJECT AREA COUNTIES ON MAP SHEET
 26077 Kalamazoo
 26159 Van Buren

All legal boundaries and names are as of January 1, 2010. Urban areas are based on results from the 2010 Decennial Census. The boundaries shown on this map are for Census Bureau statistical data collection and tabulation purposes only; their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement.

Geographic Vintage: 2010 Census reference date: January 1, 2010
 Data Source: U.S. Census Bureau's MAINTIGER database (TAB10)
 Map Created by Geography Division: March 03, 2012

U.S. DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. Census Bureau

Projection: Albers Equal Area Conic
 Datum: NAD 83
 Spheroid: GRS 80
 1st Standard Parallel: 42 47 51
 2nd Standard Parallel: 47 12 16
 Central Meridian: -86 16 11
 Latitude of Projection Origin: 41 41 45
 False Easting: 0
 False Northing: 0

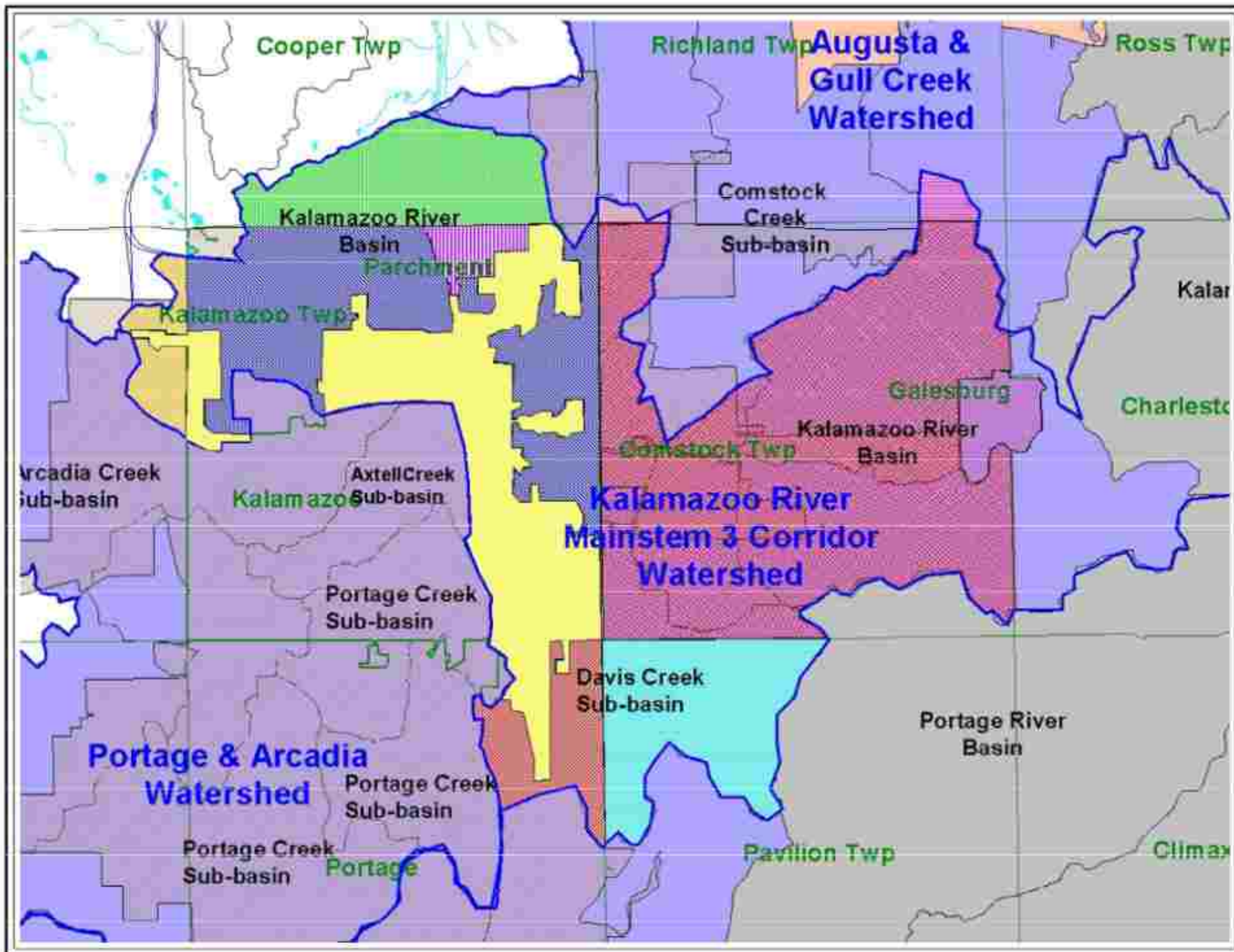


PARENT SHEET 1
 Total Sheets: 1
 Index Sheets: 0
 Parent Sheets: 1

UA NAME: Kalamazoo, MI
 UA CODE: 43723
 ENTITY TYPE: Urbanized Area (UA)
 ST: Michigan (26)

Section 4: Attachment B

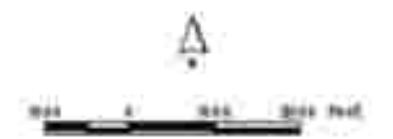
**Kalamazoo River Mainstream 3 Corridor & Portage &
Arcadia Watersheds Map**



Political Breakdown of Kalamazoo River Mainstem 3 Corridor Watershed

LEGEND

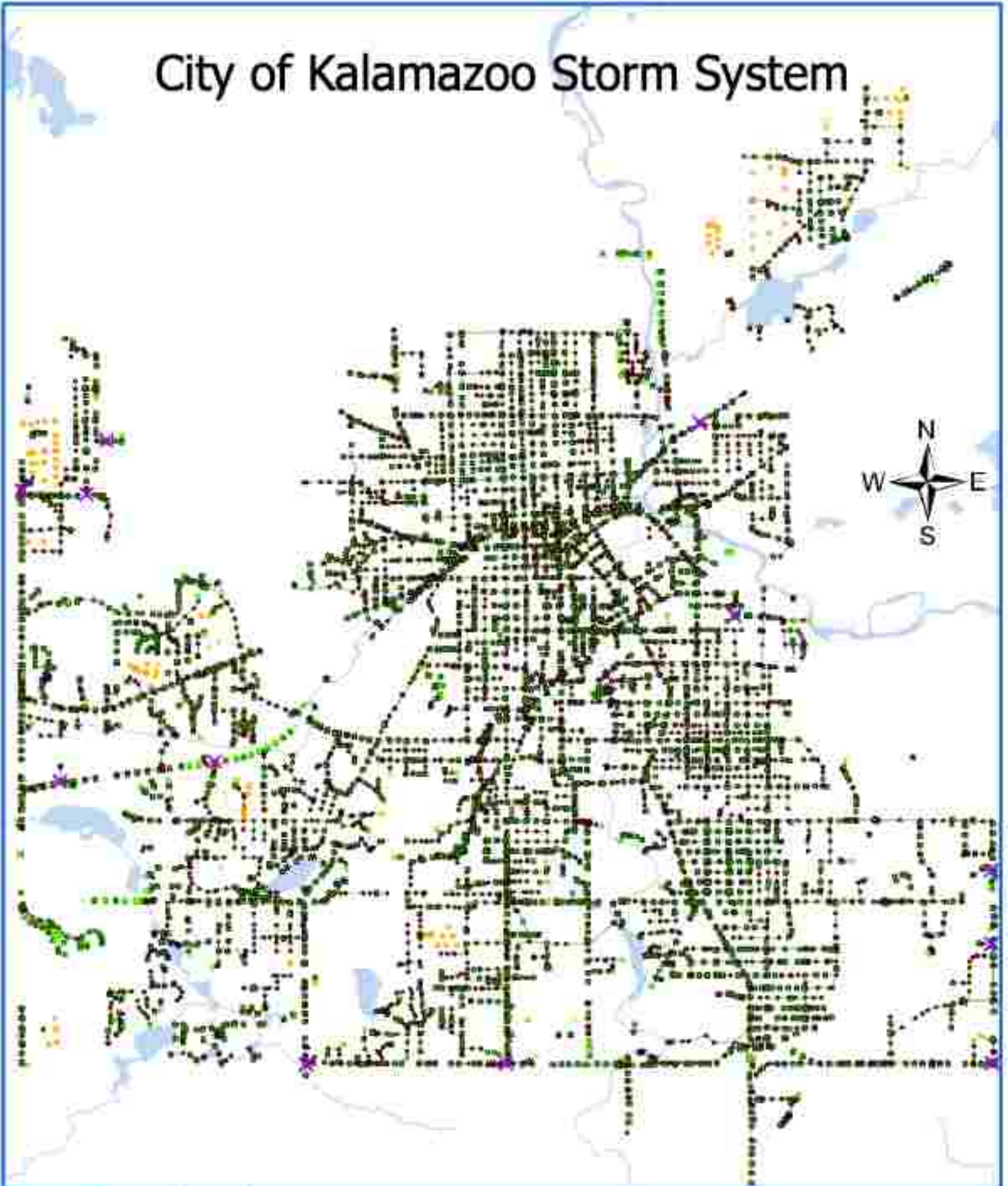
	Comstock Twp. - 1,667 acres
	City of Kalamazoo - 600 acres
	Kalamazoo Twp. - 610 acres
	Pavilion Twp. - 167 acres
	Cooper Twp. - 120 acres
	City of Portage - 160 acres
	Richland Twp. - 91 acres
	City of Galesburg - 80 acres
	City of Parchment - 54 acres
	Richland Twp. - 40 acres



Section 4: Attachment C

City of Kalamazoo Storm System Map

City of Kalamazoo Storm System



Legend

- | | | | | | | | | | |
|---|-------------------|---|-------------------|----|-------------------|---|-----------------|---|--------------------------|
| ● | Outfall to Water | ■ | call other values | ○ | Leaching Basin | — | City of Portage | ■ | State Wetlands |
| ● | Outfall to Ground | ▲ | Conduit In | PS | Stormwater Pump | — | KCOC | × | Jurisdictional Discharge |
| ● | Private Outfall | ■ | Conduit Out | — | City of Kalamazoo | — | MDOT | | |
| ● | Manhole | ■ | Inlet | — | City of Parchment | — | Private | | |
| ● | call other values | ■ | Inlet Outfall | | | — | POC | | |



Section 4: Attachment D

**Kalamazoo Valley Community College Stormwater
Management Plan – Revised 2022**

**Best Management Practices for
Stormwater Management to Preserve Water**

Stormwater Management Plan

FOR KALAMAZOO VALLEY COMMUNITY COLLEGE



MARCH 2022 Revision

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Enforcement Response Procedure

Kalamazoo Valley Community College (Kalamazoo Valley) agrees to comply with all necessary measures to report, address, and resolve stormwater quality issues, using the City of Kalamazoo's ordinances or other regulatory plans. These procedures have previously been prepared and formally adopted by the Kalamazoo City Commission and/or are part of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) approved Stormwater Phase II National Pollutant Elimination Discharge System (NPDES) Individual Permit (Permit). These measures include the implementation of the municipal separate storm sewer system (MS4) Illicit Discharge Elimination Plan (IDEP), and the enforcement of City of Kalamazoo Ordinances that are associated with water quality, primarily:

- Chapter 29 of the City of Kalamazoo Code of Ordinances (Stormwater System) (refer to Section 5 of the City's 2022 Stormwater NPDES Permit Application),
- Chapter 30 of the City of Kalamazoo Code of Ordinances (Soil Erosion and Sedimentation),
- Ordinance 1825 (Wellhead Protection Overlay), and,
- Ordinance 1826 (Performance Standards).

Refer to Appendix A, Table 1A for a list of Kalamazoo Valley's stormwater points of discharge to surface water.

Kalamazoo Valley would respond to any violations, such as an illicit connection or a soil erosion and sedimentation issue by issuing a work order utilizing Asset Essentials software by Energy and Materials Handling Manager, Nathan Rickey, to report, address, and resolve violations as necessary and maintain compliance with the City of Kalamazoo's ordinances and regulatory plans.

Kalamazoo Valley would track instances of non-compliance utilizing Asset Essentials software, including as appropriate, the name of the person responsible for violating Kalamazoo Valley's 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.

Public Participation/Involvement Program (PPP)

Purpose

The purpose of the PPP is to establish an effective framework for involving those within the Kalamazoo Urbanized Area, including stormwater management permittees, agencies, organizations, and the general public, and to help implement and modify Stormwater Management Plans (SWMPs). Kalamazoo Valley will assist the City of Kalamazoo with its efforts towards public participation and involvement as outlined in Section 5 of the City's 2022 Stormwater NPDES Permit Application. Below is a summary of the City of Kalamazoo's plan.

Procedure for Making the SWMP Available for Public Inspection and Comment

Best Management Practices (BMPs)

Kalamazoo Valley will utilize the City's public notification process regarding the SWMP via the City's websites www.protectyourwater.net and the general City website www.kalamazoo.org/. These websites will serve as the primary BMP source.

The SWMP will be available for review on the City's website in the Stormwater Section at www.protectyourwater.net/stormwater-regulations. Opportunities for comment are provided on the websites by use of the Water Contact Section at www.protectyourwater.net/contact.

Kalamazoo Valley and the City will also consider utilizing other communication opportunities to reach the public about the SWMP, including publications (e.g., newsletters), and announcements at internal and external organizational meetings, etc. The City will primarily work independently to perform the PPP but will work collaboratively with Kalamazoo Valley when applicable and possibly with other regional partners as appropriate – notably the Kalamazoo Stormwater Working Group (KSWG) for general issues and educational outreach, and the Total Maximum Daily Loads (TMDL) Non-Point Source groups.

BMP Method of Assessment

The City follows the BMPs provided in their 2022 NPDES MS4 Stormwater Discharge Permit. In conjunction and with approval of the City, Kalamazoo Valley will utilize the BMPs listed below for the *method of assessment*. Other communication strategies will be considered as publication schedules and internal discussions are made.

BMP	Description	Schedule	Method of Assessment
Public Notice	<p>The City will publicize the document is available for review and comment on the City's website.</p> <p>The City, if producing and distributing a community newsletter, will also publicize that the SWMP document is available on the website. If no community newsletter exists during the duration of the permit, the notice of the community's SWMP document being available for review and comment will be flagged/publicized on the community's homepage with a link to the SWMP.</p>	<p>1st Year of new permit issuance</p> <p>Promote document twice per permit cycle</p>	<p>Copy of the website showing the document was available and the number of comments.</p> <p>Copy of the community newsletter (if applicable) showing the document was available on the website. If no newsletter was used, a screenshot of the homepage showing the document was linked from the community's homepage.</p>
Website:	The City's web site will be utilized to explain the SWMP program and opportunities for public involvement and participation.	Ongoing	Number of comments.
Community Website Updates / Promote TMDL activities	The City will promote events put together by the Kalamazoo River Watershed Council, such as "Rain Barrel Sale", "Kanoë the Kazoo", etc., or other appropriate agency's events that are appropriate for this community.	Ongoing	<p>Number of programs promoted on website.</p> <p>A link to the KSWG website or other agency's website that is promoting various event activities is on the Community's homepage and/or the event information is promoted directly on the community website's homepage.</p>

BMP measurable goal A: BMP Public Notice - The SWMP will be available on www.protectyourwater.net by June 2022, and throughout the Permit cycle. Kalamazoo Valley will include information on the SWMP in the future using a newsletter publication, social media resources and/or their website (which ever delivery mechanism is applicable and/or available), which will include a link to www.protectyourwater.net. Kalamazoo Valley's involvement will target their stakeholders and school students as part of the community outreach.

Measurement of assessment: Number of website visits and viewer engagements to the designated stormwater website page, the number and type of comments received from the public, and the number and type of other communication strategies implemented during the Permit cycle.

Schedule for implementation and interim milestones: Kalamazoo Valley and City staff will review submitted public comments monthly, and if appropriate and/or necessary, revise the SWMP annually, taking into consideration the public comments and other available information.

Frequency of the BMP: First Year or monthly in the first year pending applicability.

BMP measurable goal B: BMP Website Education - The website (www.protectyourwater.net/KSWG/) and Kalamazoo Valley's social media resources (as applicable and/or as available), will be utilized throughout the Permit cycle for public education, involvement opportunities and comment. Kalamazoo Valley's involvement will target their stakeholders and school students as part of the community outreach.

Measurement of assessment: 1) Number and type of comments received from the public, 2) Number and type of other communication strategies implemented during the Permit cycle, 3) Number of programs promoted on website.

A link to the KSWG website or other agency's website that is promoting various event activities is on the Community's homepage and/or the event information is promoted directly on the community website's homepage.

Schedule for implementation and interim milestones: Continual operation.

Frequency of the BMP: Semi-annually or more frequently as necessary.

BMP measurable goal C: BMP Community Updates and Activities – Kalamazoo Valley will utilize a newsletter publication, social media resources and/or their website (which ever delivery mechanism is applicable and/or available) throughout the Permit cycle for promoting events including planetarium presentations of Habitat Earth at the Kalamazoo Valley Museum and the Kalamazoo area Master Rain Gardener Certification. Kalamazoo Valley's involvement will target their stakeholders and school students as part of the community outreach.

Measurement of assessment: Number of website visits to the designated stormwater website page, the number and type of comments received from the public, and, the number and type of other communication strategies implemented during the Permit cycle.

Schedule for implementation and interim milestones: Continual operation.

Frequency of the BMP: Continual operation.

Other

For the purposes of this Stormwater Permit, the City's Environmental Programs Manager serves as the Stormwater Program Manager and will be the City's point of contact (269-337-8583) for all related issues.

Public Education Plan (PEP)

The City of Kalamazoo follows the PEP provided in their 2022 NPDES MS4 Stormwater Discharge Permit Application (NPDES Permit). The primary mechanism is to provide free public education material to residents via the City's website, utilize a social media campaign to cover each PEP topic, and to promote ongoing stormwater education activities by other groups and agencies. The City uses each educational event as an opportunity to educate and in most cases, distribute materials, and occasionally provide demonstrations of various educational models. Generally, City and other staff and/or volunteers use a broad-based water quality presentation technique, discussing stormwater, TMDL, wellhead protection, and risk minimization strategies (e.g. best management practices).

The City's PEP outlines the strategies its KSWG partners can participate in to educate the public about stormwater issues and concerns. As a member of the KSWG partners and being nested under the City's NPDES permit, Kalamazoo Valley will adopt the City's long-term strategy to change societal attitudes and subsequent behavior associated with water quality issues. Kalamazoo Valley's PEP participation is not based on quantities but rather quality efforts. In conjunction with the City's PEP, Kalamazoo Valley will utilize its expertise, contacts, and resources to provide specific watershed and environmental education utilizing the City of Kalamazoo's *Stormwater Public Education Plan – Revised 2022* Table included in Appendix B.

The City has and will continue to contract professional website and social media vendors to determine the effectiveness of the public education outreach strategies. The results or "metrics" are conducted in year 1 and annually every year of the permit. For the PEP, Kalamazoo Valley and the City will cooperate with the KSWG MS4 partners to promote and disseminate quality education on the 10 NPDES-required stormwater topics utilizing a collaborative webpage www.protectyourwater.net/KSWG/.

Kalamazoo Valley commits to the following minimum schedule of PEPs (referenced as Appendix B, the City's *Stormwater Public Education Plan – Revised 2022* Table); to be reviewed annually between the City and Kalamazoo Valley, and if possible, additional PEPs may be included each year as available time permits.

Kalamazoo Valley Implementation Schedule & PEP Table Assignment

PEP Reference A (listed in Appendix B, PEP Table, Row 9 Column 4)

Year 1: Installation of 1 raingarden, ACC campus (completed 2020)

- Benefits of Native Vegetation
 - Delivery Mechanism or Activity

PEP Reference B (listed in Appendix B, PEP Table, Row 1 Column 4)

Year 1: Installation of 1 cistern, BHLC campus (completed 2020)

- Personal Watershed Stewardship
 - Delivery Mechanism or Activity

PEP Reference C (listed in Appendix B, PEP Table, Row 1 Column 4, Row 4 Column 4, Row 5 Column 4, Row 6 Column 4, and Row 7 Column 4)

Year 1-20: Stormwater & watershed specific material enhancing distribution mechanism; annual ongoing

- Personal Watershed Stewardship
 - Delivery Mechanism or Activity
- Personal Actions that Can Impact the Watershed
 - Delivery Mechanism or Activity
- Waste Management Assistance
 - Delivery Mechanism or Activity

PEP Reference D (listed in Appendix B, PEP Table, Row 2 Column 4, and Row 9 Column 4)

Year 3: Raingarden signage, 2, KVM and AWH (planned 2022-2023)

- Benefits of Native Vegetation
 - Delivery Mechanism or Activity

PEP Reference E (listed in Appendix B, PEP Table, Row 1 Column 4)

Year 3: Cistern signage, 1, FIC (planned 2022-2023)

- Personal Watershed Stewardship
 - Delivery Mechanism or Activity

PEP Reference F (listed in Appendix B, PEP Table, Row 1 Column 7, Row 4 Column 7, Row 5 Column 7, Row 6 Column 7, Row 7 Column 7, Row 9 Column 7 and Row 10-1 Column 7)

Year 4: Kalamazoo Valley Campus-Specific Community Awareness Assessment, 1 survey, KVM (based on current opportunities) (planned 2023-2024)

- Personal Watershed Stewardship
 - Evaluation Method
- Personal Actions that Can Impact the Watershed
 - Evaluation Method
- Waste Management Assistance
 - Evaluation Method
- Benefits of Native Vegetation
 - Evaluation Method

PEP Reference G (listed in Appendix B, PEP Table, Row 1 Column 4, and Row 4 Column 4)

Year 6-8: Printed Media (first poster/flyer), enhancing promotion of City's PEP

- Can be included in any of the City's Public Education Messages, depending on media topic

PEP Reference H (listed in Appendix B, PEP Table, Row 1 Column 4, and Row 4 Column 4)

Year 9-14: Video Media (first production), enhancing promotion of City's PEP

- Can be included in any of the City's Public Education Messages, depending on media topic

PEP Reference I (listed in Appendix B, PEP Table, Row 1 Column 4, Row 4 Column 4, Row 5 Column 4, Row 6 Column 4 and Row 7 Column 4)

Year 16-20: Showcase Existing Exhibits, based on availability of resources, applicability of buildings.

- Personal Watershed Stewardship
 - Delivery Mechanism or Activity
- Personal Actions that Can Impact the Watershed
 - Delivery Mechanism or Activity
- Waste Management Assistance
 - Delivery Mechanism or Activity

PEP Reference J (listed in Appendix B, PEP Table, Row 2 Column 4)

Year 16-20: Showcase Existing Exhibits, based on availability of resources, applicability of buildings.

- Benefits of Native Vegetation
 - Delivery Mechanism or Activity

Illicit Discharge Elimination Plan (IDEP)

Introduction

The purpose of the City of Kalamazoo's Illicit Discharge Elimination Plan is to prohibit and eliminate illicit discharges and connections, including discharges of sanitary wastewater to the City of Kalamazoo's municipal separate storm sewer system. The separate storm sewer system includes both open and enclosed drainage systems that are owned or operated by the City and discharge to a surface water of the State or to a separate stormwater drainage system operated by another public agency.

Kalamazoo Valley will comply with the City of Kalamazoo's IDEP and the following is the Standard Operating Procedure (SOP) Kalamazoo Valley will enact. Kalamazoo Valley will utilize the City of Kalamazoo's *Stormwater Management Plan – Revised 2022* Table included in Appendix C.

Roles and Responsibilities

Kalamazoo Valley will utilize its own employees, equipment and material as much as possible and practical to investigate illicit connects and discharges.

The Kalamazoo Valley management staff has developed a program that administers and manages the IDEP. Nathan Rickey, Energy and Materials Handling Manager (or designee), serves as Kalamazoo Valley's primary MS4 IDEP contact for the City of Kalamazoo, including general administration, all written correspondence and verbal communication with the City of Kalamazoo, IDEP implementation and reporting, scheduling and facilitating internal meetings, and providing general prioritization and guidance of IDEP related work. If Nathan Rickey is unavailable, TBD, Director of Facilities and Construction Management Services, and Dannie Alexander, Vice President for Campus Planning and Operations, are designated as the MS4 IDEP contacts.

Finding and Eliminating Illicit Connections and Discharges

Kalamazoo Valley will adhere to Attachment C of the City's 2022 Stormwater NPDES Permit Application to actively identify and eliminate illicit connections and discharges to the stormwater system affecting the Phase II NPDES Permit. The Portage Creek/Arcadia Creek watershed is the primary watershed covering the City of Kalamazoo. It includes Portage Creek, the West Fork of Portage Creek, Arcadia Creek, and Axtell Creek. The Kalamazoo River Main Stem Corridor 3 is the secondary watershed, including Davis Creek (Davis-Olmstead Drain). Kalamazoo Valley has two main "campuses", one within the Arcadia Creek watershed and one within the Portage Creek watershed.

Kalamazoo Valley's Stormwater Sewer System Map including the two Kalamazoo Valley campuses covered under the City of Kalamazoo's MS4 Permit is provided in Appendix D. Additional detailed maps are also included in Appendix D showing specific features of each building's stormwater sewer system, and the identification of all Kalamazoo Valley's stormwater assets.

Kalamazoo Valley's Stormwater Sewer System Map (and all updated versions) will be available for public inquiries at Anna Whitten Hall upon request via Nathan Rickey, Energy and Materials Handling Manager, or TBD, Director of Facilities and Construction Management Services. The map will also be available as part of the SWMP posted utilizing a newsletter publication, social media resources and/or their website (which ever delivery mechanism is available) for review and comment.

a) Stormwater sewer system maps

Kalamazoo Valley's Stormwater Sewer Systems located on the two Kalamazoo Valley watersheds covered under the City of Kalamazoo's MS4 Permit are as follows:

Arcadia Creek Watershed

- The Anna Whitten Hall (AWH), 202 N. Rose Street, Kalamazoo, MI 49007
- The Center for New Media (CNM), 100 E. Michigan Avenue, Kalamazoo, MI 49007
- Kalamazoo Valley Museum (KVM), 230 N. Rose Street, Kalamazoo, MI 49007

Portage Creek Watershed

- The Food Innovation Center (FIC), 224 E. Crosstown Parkway, Kalamazoo, MI 49007 and,
- The Culinary/Allied Health Building (CAH), 418 E. Walnut Street, Kalamazoo, MI 49007.

b) **Prioritizing areas for dry weather screening**

Kalamazoo Valley has 19 discharge points into the City of Kalamazoo's MS4 system. On a once per four-year basis, Kalamazoo Valley will conduct dry weather screening to identify illicit discharges or connections that exist within its system. At a minimum Kalamazoo Valley will conduct 4 outfall field evaluations each year for dry weather flow.

c) **Performing dry weather screening**

Kalamazoo Valley will perform dry weather screening utilizing the City's IDEP Action Chart for Outfall Field Evaluation, the Dry Weather Screening Form for field documentation and the IDEP Follow-up Investigation Report Form. (Template forms are provided in Appendix E.)

Outfalls will be screened on a once every four-year cycle, minimally 4 per year. Dry weather screening will be performed after at least 48 hours of any precipitation. Observations will be recorded on the field logs developed for the program. When flow is observed, staff will conduct field screening and document any unusual conditions, such as the presence/absence of flow, changes in water clarity, color, and odor; the presence of suds, oil sheens, sewage, floatable materials, bacterial sheens, algae, and slimes; and the staining of the banks or unusual vegetative growth. If warranted based on observations of unusual conditions or if the source of the illicit discharge is unknown, water samples from the outfall will be attempted for analysis including: temperature, pH, surfactants, ammonia, fecal coliform and/or fluoride. In addition, staff will also investigate undocumented connections and the integrity of the discharge structure.

Procedure: *(A minimum of two employees should investigate outfalls for safety reasons.)*

1. Locate outfalls to be investigated during a field investigation.
2. Conduct field observations to determine if any dry weather flow is present. If the source is not identified, the field screening will be conducted the same day for further investigation.
3. Conduct field screening if flow is observed at an outfall or point of discharge, and the source of an illicit discharge is not identified during the field observations. Record any unusual conditions, such as the:
 - presence/absence of flow, changes in water clarity, color, and odor;
 - the presence of suds, oil sheens, sewage, floatable materials, bacterial sheens, algae, and slimes; and,
 - the staining of the banks or unusual vegetative growth.
4. Investigate undocumented connections and the integrity of the discharge structure. Check outfalls during this reporting period that had dry weather flows for those confirmed as being either from dewatering, groundwater infiltration, surface water infiltration, air conditioning condensate, and/or NPDES discharge permits.

5. If warranted based on observations of unusual conditions, water samples from the outfall will be attempted for analysis including:
 - temperature,
 - pH,
 - surfactants,
 - ammonia,
 - fecal coliform and/or,
 - fluoride.
6. Record observations on the Dry Weather Screening Form.
7. Record GPS coordinates if no coordinates are in the system.
8. Take a picture of the outfalls.

Dry Weather Flow Present:

If flow from the outfall is obviously sanitary sewage discharged from the City of Kalamazoo's sanitary system, or if the source of flow from the outfall is not obvious, contact the City for assistance in identifying the source.

For reports from the public regarding illicit discharges and connections, follow the call information presented below in the "Public Calls and Other Contacts" section.

Illicit Discharge Source Identification

Once an illicit discharge has been detected and the source is not obvious, the City will assist Kalamazoo Valley with conducting further investigation in accordance with the City's SWMP in Section 5 of the City's 2022 Stormwater NPDES Permit Application, and its Appendix for the documentation forms. Tracking, identification and elimination will be recorded on the investigation report (Appendix E). Kalamazoo Valley will use any of the following methods:

- Upstream manhole investigation, to be completed on the day the discharge was detected,
- Indicator parameter testing, to be completed on the day the discharge was detected,
- Video testing,
- Dye testing,
- Smoke testing,
- Drainage area investigations,
- Documented visual observation or physical indicators, and/or
- Homeowner surveys and surface condition inspections for on-site sewage disposal systems.

Eliminating Illicit Discharges, Prioritization Schedule

If an illicit discharge is reported, or a complaint is filed, it will be investigated within 24 hours. If an illicit discharge is reported, identified and confirmed, through sampling or other means described above, Kalamazoo Valley will further assist to identify the source, and the source will be stopped immediately. Downstream stormwater sewers will be cleaned and vacuumed within 24-hours to prevent any further influence on surface waters. Illicit discharge response activities will be fully documented and kept in a separate file maintained by Kalamazoo Valley staff. Illicit discharge response activities along with field inspection sheets will be kept during each permit reporting period. IDEP response information is outlined below in further detail.

The prioritization schedule detailed below will be implemented to eliminate confirmed illicit discharges.

Conditions-Highest To Lowest Priority	Permanent Fix Timeline
Dry Weather Significant Illicit Discharges - untreated or partially treated human sewage	24 hours to eliminate the discharge; 72 hours response activities complete
Dry Weather Significant Illicit Discharges – non-sewage related, but meets 24-hour notification criteria	24 hours to eliminate the discharge; 72 hours response activities complete
Dry Weather Significant Illicit Discharges - does not meet 24-hour notification criteria	48 hours to eliminate the discharge; 60 days response activities complete
Dry Weather Non-Significant Illicit Discharges	48 hours to eliminate the discharge; 60 days response activities complete
Wet Weather Illicit Discharges	24 hours to eliminate the discharge; 60 days response activities complete

Responding to Illegal Dumping and Spills

Kalamazoo Valley's response to illegal spills and dumping will be in line with the Section 7 of the City's 2022 Stormwater NPDES Permit Application.

Public Calls and Other Contacts

A public reporting system for illicit discharges and/or connections has been prepared by the City to record, investigate, source identify, and perform corrective action in an attempt to resolve reports to the maximum extent practicable. Kalamazoo Valley's response to public calls and other contacts will be in accordance with the Section 5 of the City's 2022 Stormwater NPDES Permit Application. It is important to note that neither City nor Kalamazoo Valley staff are certified or trained as "First Responders" to chemical spills. Consequently, decisions regarding any required immediate and/or remedial actions will be directed to the Kalamazoo County HazMat Team who will make the determination whether they contact an appropriate remedial firm to perform the necessary remedial action and invoice the responsible party, or if the responsible party will directly retain the necessary firm. The City has pre-qualified firms available to perform emergency remedial work if a responsible party is not immediately identified. Subsequently, the City would attempt to identify a responsible party to collect reimbursement for accrued expenses. As necessary, Kalamazoo Valley may contact an appropriate remedial firm to perform the necessary remedial action.

The public reporting system for incidents within the City of Kalamazoo limits is as follows:

- For emergency or non-emergency incidents during regular business hours (8 a.m. to 5 p.m.) affecting City utilities, calls/reports from the public regarding illicit discharges and connections, dial 311 or 269-337-8000. Inquiries are typically made to the Kalamazoo Environmental Programs Manager at 269-337-8583 or the Environmental Compliance Supervisor at 269-337-8365.
- If the incident involves sanitary sewage discharged from the City of Kalamazoo's sanitary system, or if the source of flow from the outfall is not obvious, immediately contact the City of Kalamazoo's dial 311 or 269-337-8000, or the Environmental Compliance Supervisor at 269-337-8365. Sanitary sewer overflows (SSOs) should be reported to EGLE Water Resources Division, Water Quality Unit, Marcus Tironi at 269-330-9468.
- For emergency incidents during non-business hours (5 p.m. to 8 a.m.) affecting City utilities, calls or reports from the public regarding illicit discharges or connections, should be made to 911. For a non-emergency, call the Kalamazoo Department of Public Safety (Central Dispatch) at 269-488-8911 to request that the Hazmat Team respond to the report. If appropriate or the incident is outside the City, contact the Kalamazoo County IDEP Hotline at 269-381-3171 and the EGLE's 24/7 Pollution Emergency Alert System (PEAS) Hotline at 800-292-4706.

Kalamazoo Valley Contacts:

For all emergency or non-emergency incidents, calls/reports from the public are made to the Kalamazoo Valley Public Safety Department at 269-488-4575.

All Kalamazoo Valley recipients of these calls are directed to forward these calls to Public Safety. Public Safety will report these calls to Kalamazoo Valley management staff. Management staff will consider each report and prioritize it based on all available information. Management staff will then determine the appropriate response, based on the information provided and the availability of staff. Response options include, but are limited to, sending facilities staff to the site to perform an initial field assessment regarding the need for field/source investigations, or whether the Public Safety Central Dispatch at 269-488-8911 should be contacted to request that the Hazmat Team be dispatched to the site, or staff may immediately contact Central Dispatch prior to performing an initial field assessment.

Training Staff

The City follows the Employee and Contractor training process as outlined in their SWMP Table provided in their 2022 Stormwater NPDES Permit Application. Kalamazoo Valley will utilize the City of Kalamazoo's *Stormwater Management Plan – Revised 2022* Table included in Appendix C. In conjunction and with approval of the City, Kalamazoo Valley will utilize the City's training process summarized below. Other communication strategies will be considered as publication schedules and internal discussions are made.

Training will be given to existing staff who are involved in illicit discharge-related activities on a once per five-year cycle (i.e. 2022-2027). New staff will be trained within the first year of hire.

Contractors hired by Kalamazoo Valley performing work that may affect the MS4 system will be required to have training per the contract specifications. Kalamazoo Valley will integrate stormwater control requirements into bid specifications, contractor training/certification and documentation.

The training will include:

- The definition of illicit discharges and connections;
- Techniques for finding illicit discharges, including field screening, source identification, and recognizing illicit discharges and connections;
- Methods for eliminating illicit discharges and the proper enforcement response;
- Techniques for sampling, analyzing, and recording information;
- Recognition of naturally occurring phenomena and their sources (bacteria sheens, slimes, and films; bryozoans, pollen, blue-green algae, green algae, tannins, and foams); and,
- Continued use of the Excel DVD "Storm Watch Municipal Storm Water Pollution Prevention, the MDEQ DVD "Storm Water Employee Training" for employee training, and the more specific IDEP focused DVD "Illicit Discharge Detection & Elimination A Grate Concern."

Illicit Discharge Elimination Program Effectiveness

Kalamazoo Valley will review the effectiveness of the IDEP in a manner similar to the City's SWMP in Sections 5 and other IDEP requirements in Section 7 of the 2022 Stormwater NPDES Permit Application. The IDEP will be evaluated by using the following:

- Kalamazoo Valley outfalls will be screened once per four-year cycle. Annual reports will include information on screening activities. In addition, reports will include an assessment of the screening.

- The number of illicit discharges/connections identified versus the number eliminated will be reported in annual reports. Also, difficulties in identifying, correcting illicit discharges/connections, and any enforcement issues will be contained in reports.
- Annual reports will contain information on any complaints by the regarding illicit discharges.
- The frequency of staff/contractor training will also be assessed during the permit period.

Annual Reporting

Kalamazoo Valley will document actions taken to eliminate illicit discharges and connections. Kalamazoo Valley will prepare IDEP reports in a manner approved by the City and in accordance with their SWMP, Attachment C. Annual reports will summarize the total estimated volume and pollutant load eliminated for the main pollutants of concern, and the locations of the discharges into both the City MS4s and the receiving water, if applicable. The annual report can be submitted to the City using the Annual Phase II Municipal Separate Storm Sewer System Report included in Appendix F or any future format required by the MDEQ.

Recordkeeping

Kalamazoo Valley will keep and maintain all IDEP records of:

- IDEP investigations and field logs;
- Records of actions taken to eliminate illicit discharges,
- Records of total estimated volume and pollutant loads eliminated, and
- Employee training records.

Illicit Discharge Ordinance

Kalamazoo Valley implementation and the enforcement of the IDEP will be in accordance with the City of Kalamazoo's Ordinances that are associated with water quality, primarily:

- Chapter 29 of the City of Kalamazoo Code of Ordinances (Stormwater System),
- Chapter 30 of the City of Kalamazoo Code of Ordinances (Soil Erosion and Sedimentation),
- Ordinance 1825 (Wellhead Protection Overlay), and,
- Ordinance 1826 (Performance Standards).

Chapter 29 of the City of Kalamazoo Code of Ordinances is included in the City's SWMP as Attachment A, 29-4A. Answers to specific questions in the City's Permit Application, SECTION VII. STORMWATER MANAGEMENT PROGRAM, Illicit Discharge Ordinance, are provided below after the permit application question number:

21. See Attachment A, 29-4A.
22. See Attachment A, 29-4A(3).
23. See Attachment A, 29-4A(3).
24. See Attachment A, 29-4A and 4B.
25. See Attachment A, 29-4A and 4B.
26. See Attachment A, 29-7, 8, 11.
27. See Attachment A, 29-11, 13, 14.

Construction Stormwater Runoff Control Program

Kalamazoo Valley's implementation of the Construction Stormwater Runoff Control (CSRC) Program will be in accordance with Chapter 30 of the City of Kalamazoo Code of Ordinances (Soil Erosion and Sedimentation). Kalamazoo Valley agrees to comply with all necessary measures to report, address, and resolve stormwater

quality issues, using the City of Kalamazoo's ordinances or other regulatory plans; related to construction stormwater runoff control. These efforts include the training of appropriate staff and contractors on construction stormwater runoff control and the use of approved Best Management Practices.

The City is the Municipal Enforcing Agency (MEA) for Part 91 of Act 451, and as such, Kalamazoo Valley will follow the City's SWMP in Section 5 and CSRC program in Section 8 of the City's 2022 Stormwater NPDES Permit including the following:

- "Construction Stormwater Runoff Control", "Notifications," and Chapter 30 of the City Code of Ordinances "Soil Erosion and Sedimentation Control."
- The City Code of Ordinances "Soil Erosion and Sedimentation Control."
- "MEA for SESC," and the "City of Kalamazoo Code of Ordinances Appendix A – Zoning Ordinance" Section 8.3 H1.d and H7.i.

For all CSRC program issues related to Ordinance 30, Kalamazoo Valley will directly interact with the City's MEA, the Department of Community Planning and Economic Development, Code Administration Division, by calling 269-998-6355. For all CSRC program issues related to utility work within a right-of-way, Kalamazoo Valley will directly interact with the City's MEA, the Department of Public Services, Engineering Division, by calling 269-337-8454.

To report discharges of sediment to surface waters of the state, Kalamazoo Valley will:

1. Follow the IDEP procedures.
2. Contact the MEA soil erosion agent at the City of Kalamazoo.
3. Contact the Michigan EGLE, Kalamazoo District Office, Water Resources Division at 269-568-2699 or 269-567-3500.
4. As necessary, contact the PEAS Hotline at 800-292-4706.

When required during construction projects, Kalamazoo Valley will obtain a Part 91 Soil Erosion and Soil Control permit through the City's MEA in accordance with Rule 1709 promulgated under the authority of Part 91, Soil Erosion and Sedimentation Control (SESC), of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. A copy of the City's SESC permit application is provided in Appendix G.

Post Construction Stormwater Control for New Development and Redevelopment Projects

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

- Kalamazoo Valley will comply with their December 3, 2013, Stormwater Management Procedures (refer to CMOP 2072) to implement their Post-Construction Stormwater Controls. (Please note that the title of the person responsible to "promulgate procedures/guidelines" is not current. The title should now read "Executive Vice President for Enrollment and Campus Operations".)
- Kalamazoo Valley will comply with existing and future City of Kalamazoo ordinances or regulatory mechanisms to implement the Post-Construction Stormwater Controls.
- On at least a once every five-year basis or within the first year of hire, Kalamazoo Valley will provide training to appropriate staff on post-construction site stormwater runoff control and the use of approved BMPs.

- Kalamazoo Valley will provide documentation to the City of Kalamazoo of the use of Post-Control Stormwater Control BMPs to control runoff.
- Kalamazoo Valley will respond to any complaints received regarding stormwater runoff control at the facilities and inform the City of the details of the complaint and its resolution within 14 days.

As an example, Kalamazoo Valley's most recent 2017 Stormwater Calculations for Pre- and Post-Development are provided along with the stormwater system maps in Appendix D.

Pollution Prevention and Good Housekeeping Activities for Municipal Operations

Introduction

The Pollution Prevention and Good Housekeeping (P2/GH) Program is designed to help reduce pollutants in surface runoff from facilities. Kalamazoo Valley outlines specific actions and implementation schedules for P2/GH to minimize pollutant runoff to the maximum extent practicable from its operations that have the potential to discharge stormwater to surface waters of the state.

Kalamazoo Valley's Stormwater Sewer System Map (and all updated versions) will be available for public inquiries at Anna Whitten Hall upon request via Nathan Riskey, Energy and Materials Handling Manager, or TBD, Director of Facilities and Construction Management Services. The map will also be available as part of the SWMP posted utilizing a newsletter publication, social media resources and/or their website (which ever delivery mechanism is available) for review and comment.

Municipal Facility and Structural Stormwater Control Inventory

Kalamazoo Valley is considered a "Public School" which owns municipal properties and maintains a variety of structural stormwater controls. Below is a summary of the facilities and structural stormwater controls owned or operated within the urbanized area of Kalamazoo. Updating and revising the inventory is performed within 30 days following the adding or removing of a facility or structural stormwater control. Kalamazoo Valley staff will report changes to the City of Kalamazoo and the Information Technology staff that manage the assets database and maps to make the necessary changes to properly update the information. Changes to the facilities and structural storm water controls include additions, removals, or other structures no longer owned or operated by Kalamazoo Valley. This information will also be included in the City's Annual Phase II Municipal Separate Storm Sewer System Report (Appendix F).

List of Kalamazoo Valley Stormwater Assets – March 2022

- 19 outfalls
- 10 catch basins and outlets
- 2 manholes
- 4 raingardens
- 1 cistern
- 3 porous pavements
- 3 porous paver sidewalks
- 2 bioswales

A list of Kalamazoo Valley's stormwater points of discharge to surface water is provided as Appendix A, Table 1. Kalamazoo Valley's Stormwater Sewer System Map including the two Kalamazoo Valley campuses covered under the City of Kalamazoo's MS4 Permit is provided in Appendix D. Additional detailed maps are also included in Appendix D showing specific features of each building's stormwater sewer system, and the

identification of all Kalamazoo Valley's stormwater assets:

Facility-Specific Stormwater Management

Facilities are assessed for the potential to discharge any of the following pollutants to surface water of the state such as sediment, salt, lawn clippings, oil sheens from dripping vehicles, nutrients from soil and fertilizer, heavy metals, phosphorus attached to soil particles. The BMPs are necessary to prevent pollutants from discharging to the surface water.

The following factors were considered for selection of the BMPs:

- Amount of urban pollutants stored at the site,
- Identification of improperly stored materials,
- The potential for polluting activities to be conducted outside,
- Proximity to waterbodies,
- Poor housekeeping practices, and
- Discharge of pollutants of concern to impaired waters.

Updating and revising the assessment will be 30 days prior to discharging stormwater from a new facility, and within 30 days of determining a need to update/revise the facility assessment. Data can be documented using a form similar to the following:

Facility	Facility Description	Address	Potential Pollutant Discharge to Surface Water	Potential Pollutant Activities	Prioritized Facilities
AWH	Classroom building	202 N. Rose St.	Low	Storm water runoff from street to raingardens 1 & 2 BMP1, BMP2, BMP3, BMP4, BMP5, BMP6, BMP7	3 - New raingardens will catch most pollutants
CNM	Classroom building	100 E. Michigan Ave.	Low	None BMP1, BMP2, BMP3, BMP5, BMP6, BMP7	5 - Only roof drains at this building
XVM	Museum	230 N. Rose St.	Low	Sidewalk salting BMP1, BMP1, BMP2, BMP3, BMP5, BMP6, BMP7	4 - New raingarden will catch runoff
FIC	Self-contained greenhouse	224 E. Crosstown Pkwy.	Low	Parking lot runoff and sidewalk salting BMP1, BMP2, BMP3, BMP4, BMP5, BMP6, BMP7	2 - 3-year old structures. Worked with DEQ to design riparian O&M
CAH	Classroom & lab building	418 E. Walnut St.	Low	Parking lot runoff and sidewalk salting BMP1, BMP2, BMP3, BMP4, BMP5, BMP6, BMP7	1 - 3-year old structures. Worked with DEQ to design riparian O&M

Kalamazoo Valley facilities have parking lots with stormwater discharge. Implemented BMPs (provided in Appendix C, SWMP) are referenced in the table above. Utilized BMPs are described below:

- Snow removal and deicing operations for Kalamazoo Valley are contracted and snow is stored mostly in lawn areas to minimize runoff (Reference **BMP1** listed in Appendix C, SWMP, Row 16).
- Pavement maintenance is contracted including street sweeping and vactoring for pervious pavement (Reference **BMP2** listed in Appendix C, SWMP, Row 11).
- Property /grounds and riparian buffer strip maintenance is contracted. Kalamazoo Valley will comply with the City's "Lawn Care Guidelines for Parks, Greenspaces, and Along Waterways". The contractor knows to keep clippings and leaves picked up, to mow at scheduled frequencies, and maintain the natural vegetative buffer strips (Reference **BMP3** listed in Appendix C, SWMP, Rows 12, 13 & 23).
- Pesticide and herbicide use by a certified pesticide applicator only occurs when vegetation cannot be handled by mowing and poses a traffic hazard. Fertilizer is used to encourage growth in the lawn areas. This fertilizer contains no phosphorus (Reference **BMP4** listed in Appendix C, SWMP, Row 24).
- Vehicle Maintenance and fueling is done at the "vehicles building" at our Texas Township Campus (Reference **BMP5** listed in Appendix C, SWMP, Row 4).
- Small quantities of chemicals for facility maintenance are stored indoors away from storm drains. Trash receptacles are placed where the discharge of contaminants to surface water is unlikely. Dumpsters are maintained to minimize impact to the storm sewer system. Lids are kept closed. Kalamazoo Valley owns and operates stormwater control structures including catch basins and outfalls, pervious pavement parking lots, rain gardens, and cistern (Reference **BMP6** listed in Appendix C, SWMP, Row 10).
- Kalamazoo Valley has approximately 9 catch basins to maintain at both the BLHC and ACC campuses (Reference **BMP7** listed in Appendix C, SWMP, Row 15).

Structures are inspected on an annual basis by the Kalamazoo Valley facilities staff and maintenance is recommended to Field Services as necessary.

Structural Stormwater Control Operation and Maintenance (O&M)

O&M inspection and updating/revising the O&M assessment data should be conducted routinely. Data can be documented using a form similar to the following:

Structure/ ID#	Location	O&M Completed

Note: * denotes outlets to surface waters of the State

Catch Basins: Inspection/Maintenance/Cleaning Prioritization and Location

Catch basin inspection, maintenance, and cleaning are based on heavy traffic areas and problem spots for Kalamazoo Valley. Top priority is given to those catch basins in heavy traffic areas. Kalamazoo Valley prioritizes catch basin cleanout annually based on facility staff inspections and functionality of the system. Catch basin/inlet cleanings are only done primarily in response to reports of localized flooding due to obstructions or sediment build-up. The criteria used to determine if cleanout is necessary will typically be when the sump is 1/3 to 1/2 full of sediment.

Catch Basin Maintenance/Inspection Procedure

Kalamazoo Valley has several catch basins at both facilities. During the spring, summer, and fall seasons, Kalamazoo Valley facilities staff will inspect catch basins and raingarden for damage, sediment buildup, and functional ability. Kalamazoo Valley surface cleans catch basins at a minimum of once per season or as necessary for flooding or unpredictable incidences.

If surface cleaning is insufficient or when the catch basin becomes 1/3 to 1/2 full of sediment, Kalamazoo Valley facilities staff will contract to have a vactor truck remove debris and water. The contractor will be responsible for the proper disposal of the removed debris and water. This process is in line with the City's process for catch basin maintenance and inspection procedure.

Kalamazoo Valley contracts to repair or replace damaged infrastructure based on reports of failing or failed structures or planned road improvements. Catch basins are also inspected during IDEP investigations, and when functional problems are observed or reported. Disposal of maintenance waste materials is always performed in accordance with regulatory requirements.

The amount of sediment collected, the location, and the frequency of devices being cleaned is tracked.

Additional Stormwater Controls Inspection/Maintenance Procedures

Below are the inspection and maintenance procedures for addition stormwater structural controls. Updating and revising the procedure will be 30 days following the implementation of a new structural stormwater control.

Municipal Operations and Maintenance Activities

The City follows the operations and maintenance processes as outlined in their SWMP Table, Rows 1, 8, 10, 11, 14, 16, 17, 18, and last column as provided in their 2022 Stormwater NPDES Permit Application. In conjunction with the City, Kalamazoo Valley will utilize the City's applicable processes as summarized below.

Kalamazoo Valley will utilize the City of Kalamazoo's Stormwater Management Plan – Revised 2022 Table included in Appendix C. Kalamazoo Valley utilizes the same BMPs for operations and maintenance activities as are outlined in the Facility-Specific Stormwater Management processes:

- Reference **BMP1** listed in Appendix C, SWMP, Row 16
- Reference **BMP2** listed in Appendix C, SWMP, Row 11
- Reference **BMP3** listed in Appendix C, SWMP, Rows 12, 13 & 23
- Reference **BMP4** listed in Appendix C, SWMP, Row 24
- Reference **BMP5** listed in Appendix C, SWMP, Row 4
- Reference **BMP6** listed in Appendix C, SWMP, Row 10
- Reference **BMP7** listed in Appendix C, SWMP, Row 15

Roadways, Parking Lots, and Bridges

Parking lot maintenance: Pavement maintenance operations such as sweeping, sealing, saw cutting, vactoring and tack coating for new pavement placement are contracted or conducted by Kalamazoo Valley personnel as necessary. Prioritization of pavement maintenance operations is determined on an as needed basis. The prioritization schedule is reviewed annually.

Sweeping: Sweeping operations are contracted and completed bi-annually or as necessary based on observed conditions throughout the year. The prioritization is based on the current conditions and use of the parking lots, which is reviewed annually.

Vactoring: Vactoring pervious pavement operations are contracted and completed bi-annually or as necessary based on observed conditions throughout the year. As necessary and based on prioritization, the City will assist Kalamazoo Valley with vactoring capabilities. The prioritization is based on the current conditions and use of the pervious parking lots, which is reviewed annually.

Snow Removal/Salt Application: Snow removal and deicing operations are contracted and snow is stored to minimize runoff.

Vehicle Washing: Vehicle maintenance and fueling is done at the “vehicles building” located at our Texas Township Campus.

Managing Vegetated Properties

Kalamazoo Valley contractors mow the building grounds. Contractors are trained as certified chemical applicators and are allowed to apply fertilizers, pesticides and herbicides.

- Fertilizers – Kalamazoo Valley lawn care contractors use fertilizer to encourage growth in the lawn areas. The fertilizers do not contain phosphorus.
- Pesticides – On occasion, pesticides are used for wasp control and grub control.
- Herbicides – Herbicides have been used for weed control on a spot treatment basis.

Riparian Buffer Strips

Contractors hired to perform lawn maintenance activities within riparian buffer strips along the streams running through Kalamazoo Valley’s property are expected to comply with pollution prevention and good housekeeping BMPs. Lawn care contractors are required to manage the riparian buffer zone by mowing at recommended frequencies taking care not to allow woody growth, but rather to encouraging the native plant growth. Contractors are inspected by the Kalamazoo Valley staff. Contract language has been modified to include P2/GH expectations.

Contractor Requirements and Oversight

Contractors hired to perform maintenance activities are expected to comply with pollution prevention and good housekeeping BMPs. Contractors are inspected by the Kalamazoo Valley staff. Contract language has been modified to include P2/GH expectations.

Employee Training

Training will be given to existing staff who are involved in Kalamazoo Valley facilities operations outlined above on a once per five-year cycle. New staff will be trained within the first year of hire. Specific training for contractors will be done prior to work being performed.

The training topics will include the effects of pollutants on water quality entering the MS4, such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, stormwater system maintenance, and any other activities as specified in the permit. The training schedule is listed below and outlined in the following table:

- For existing employees, one training session within the first year of the Nested Jurisdiction Agreement with the City of Kalamazoo;
- For new employees, one training session during the first year of employment; and,
- For contractors, the permittee shall ensure that the contractors are trained before they perform the contract work. (Note: Kalamazoo Valley includes stormwater control requirements in their bid specifications.)

Employees	Training Frequency
Kalamazoo Valley Facilities Staff	1 per 5-year permit cycle
Seasonal	At time of hire
Contractors	As needed and before contract work is performed.

Total Maximum Daily Load - Total Phosphorus

Total Phosphorus

The Kalamazoo River Watershed and Lake Allegan, an impoundment of the Kalamazoo River, have a designated Total Maximum Daily Load (TMDL) for phosphorus. A "Cooperative Agreement" was created and enacted by the wastewater (point) dischargers within the watershed to voluntarily reduce their NPDES permitted phosphorus loadings during the key growing period of the year, April through September. Through studies by the EGLE, 33% of the phosphorus load was estimated to be from point sources of pollution. Non-point source (NPS) pollution, the more diffuse and difficult type of pollution to control, was estimated to comprise 76% of the phosphorus inputs to the watershed.

The effort to reduce both point source and NPS pollution necessitated the development of the document "Lake Allegan/Kalamazoo River Watershed TMDL Implementation Strategic Plan for 2012 and Beyond – Revision 2021" (TMDL Strategic Plan). Currently Kalamazoo Valley does not utilize fertilizers or other products with phosphorus. Kalamazoo Valley will adhere to the TMDL Strategic Plan by implementing BMPs when opportunities arise including but not limited to reduced discharge, sweeping, installation of rain gardens or asset cleaning. If in the future the circumstances change, this document outlines several strategies that Kalamazoo Valley could employ to reduce phosphorus including but not limited to soil erosion prevention, sweeping and the operation and maintenance of the facilities assets. Kalamazoo Valley will pursue sediment and phosphorus reduction efforts as applicable and will participate in the public education and outreach efforts as outlined in Section 9 of the City's 2022 Stormwater NPDES Permit, and the Stormwater Public Education Plan – Revised 2022 Table included in Appendix C of this document.

E. Coli

EGLE periodically reassesses and updates the list of impaired streams. TMDLs addressing recreational and aquatic life use impairments have been developed for several waterways in the Kalamazoo River Watershed (KRW) using limited data gathered in 2010 by the local health department. Because bacteria are used to assess recreation use impairment, target concentrations for E. Coli have been developed for the TMDLs addressing bacteria impairments. As of March 2022, three sub watersheds within the Kalamazoo River Watershed were determined by EGLE to be designated with a TMDL E. Coli impairment status: Arcadia Creek, Davis Creek, and Axtell Creek. Please note, Kalamazoo Valley's Downtown campuses only have MS4 discharges to Arcadia Creek.

Given the need to address the requirements in the TMDLs, the Kalamazoo Stormwater Working Group (KSWG) determined that it would be to the benefit of the KRW if TMDL-related activities and other water quality monitoring were done in a collaborative, uniform manner throughout the watershed. Kalamazoo Valley will participate with the KSWG MS4 communities, as a nested permittee of the City of Kalamazoo's MS4 permit, in the TMDL E. Coli impairment assessment as outlined in Section 9 of the City's 2022 Stormwater NPDES Permit.

Appendices

*Appendix A - MS4 NPDES Application: Table 1 – KVCC MS4
Points of Discharge*

MS4 NPDES Application: Table 1 - KVCC MS4 Points of Discharge

Outfall ID	Location Description	Discharge Type	Pipe Size	Discharge Location	GPS Location
AWH GWS1	Anna Whitten Hall	Ground water sump	6"	City Storm @ Water St.	42.292790, -85.584406
AWH RD1	Anna Whitten Hall	Roof drains	8"	City Storm @ Water St.	42.292790, -85.584406
AWH RG1	Anna Whitten Hall	Infiltration structure with overflow	6"	City Storm @ Water St.	42.292579, -85.583817
AWH RG2	Anna Whitten Hall	Infiltration structure with overflow	6"	City Storm @ Water St.	42.292683, -85.583573
AWH RG3	Anna Whitten Hall	Infiltration structure with overflow	6"	City Storm @ Water St.	42.292726, -85.583682
CNM RD1	Center for New Media	Roof drains	4"	City Storm @ Kalamazoo Mall/E. Michigan Ave.	42.292004, -85.583138
CNM RD2	Center for New Media	Roof drains	8"	City Storm @ Kalamazoo Mall/E. Michigan Ave.	42.292242, -85.583054
CAH PLD1	Culinary & Allied Health	PerVIOUS lot drain	8"	Portage Creek	42.285243, -85.577491
CAH PLD2	Culinary & Allied Health	PerVIOUS lot drain	8"	Portage Creek	42.285538, -85.577130
CAH PLD3	Culinary & Allied Health	PerVIOUS lot drain	8"	Portage Creek	42.285679, -85.577035
CAH RD1	Culinary & Allied Health	Roof drains	8"	Portage Creek	42.285832, -85.577695
CAH RD2	Culinary & Allied Health	Roof drains	12"	Portage Creek	42.285491, -85.578196
FIC PLD1	Food Innovation Center	PerVIOUS lot drain	8"	Portage Creek	42.280125, -85.578042
FIC PLD2	Food Innovation Center	PerVIOUS lot drain	8"	Portage Creek	42.280419, -85.578104
FIC PLD3	Food Innovation Center	lot drain and overflow for cistern	8"	Portage Creek	42.280604, -85.578304
FIC RD1	Food Innovation Center	Roof drains	12"	Axell Creek	42.281071, -85.580165
KVM RD1	Kalamazoo Valley Museum	Roof drains	8"	City Storm @ Eleanor St.	42.293405, -85.583636
KVM SD1	Kalamazoo Valley Museum	Sidewalk drain	6"	City Storm @ Rose St.	42.293211, -85.584732
KVM RG1	Kalamazoo Valley Museum	Infiltration structure with overflow	6"	City Storm @ Rose St.	42.293281, -85.584520

Appendix B - Stormwater Public Education Plan
Revision 2022 Table



Stormwater Public Education Program - Revised 2022

Item	Public Education Topic	Key Messages	Target Audience	Delivery Mechanism or Relationship	Timeline	Evaluation (Measured Outcome)	Measurable Goal
1	Effects and Education (the Public As Proper Application and Disposal of Petroleum, Antifreeze, and Pesticides)	Proper disposal of automotive petroleum, antifreeze, and household paint by the Department's Curbside Household Hazardous Waste Drop-off program is critical to protecting our environment and public health.	Residents, visitors, and businesses that are generating household hazardous waste.	Provide public education on correctly disposing of automotive oil, antifreeze, and paint. Provide information on the Department's Curbside Household Hazardous Waste Drop-off program. Provide information on the Department's Household Hazardous Waste Drop-off program. Provide information on the Department's Household Hazardous Waste Drop-off program.	Provide a presentation on curbside disposal (once)	Education delivered by community education center (online delivery) Community education center (in-person) by the department Departmental website (in-person)	Education topic awareness as measured through online survey at 100% participation rate Education topic awareness as measured through online survey at 100% participation rate Education topic awareness as measured through online survey at 100% participation rate
2	Petroleum Pallets, Oil Spills, Fuel Spills, and Antifreeze that May Enter the MSW	Keep petroleum products like oil, fuel, and antifreeze out of your home and out of the MSW.	Residents, visitors, and businesses that are generating household hazardous waste.	Provide public education on correctly disposing of automotive oil, antifreeze, and paint. Provide information on the Department's Curbside Household Hazardous Waste Drop-off program. Provide information on the Department's Household Hazardous Waste Drop-off program. Provide information on the Department's Household Hazardous Waste Drop-off program.	Provide a presentation on curbside disposal (once)	Education delivered by community education center (online delivery) Community education center (in-person) by the department Departmental website (in-person)	Education topic awareness as measured through online survey at 100% participation rate Education topic awareness as measured through online survey at 100% participation rate Education topic awareness as measured through online survey at 100% participation rate
3	Washers and Rinsers (the Awareness, Location, and Requirements of Facilities for Collection or Disposal of Household Automotive Washer Fluid, Toner, Battery Waste, Oil, Antifreeze, and Other Volatile Fluids)	Washers and rinsers are a common household item that can be used to clean cars, trucks, and boats. They are also a source of household hazardous waste.	Residents, visitors, and businesses that are generating household hazardous waste.	Provide public education on correctly disposing of automotive oil, antifreeze, and paint. Provide information on the Department's Curbside Household Hazardous Waste Drop-off program. Provide information on the Department's Household Hazardous Waste Drop-off program. Provide information on the Department's Household Hazardous Waste Drop-off program.	Provide a presentation on curbside disposal (once)	Education delivered by community education center (online delivery) Community education center (in-person) by the department Departmental website (in-person)	Education topic awareness as measured through online survey at 100% participation rate Education topic awareness as measured through online survey at 100% participation rate Education topic awareness as measured through online survey at 100% participation rate
4	Septic Tank Care and Maintenance	Septic tanks are used to collect and treat wastewater from homes and businesses. They are an important part of our water infrastructure.	Homeowners, visitors, and businesses that are generating household hazardous waste.	Provide public education on correctly disposing of automotive oil, antifreeze, and paint. Provide information on the Department's Curbside Household Hazardous Waste Drop-off program. Provide information on the Department's Household Hazardous Waste Drop-off program. Provide information on the Department's Household Hazardous Waste Drop-off program.	Provide a presentation on curbside disposal (once)	Education delivered by community education center (online delivery) Community education center (in-person) by the department Departmental website (in-person)	Education topic awareness as measured through online survey at 100% participation rate Education topic awareness as measured through online survey at 100% participation rate Education topic awareness as measured through online survey at 100% participation rate

Appendix C - Stormwater Management Plan
Revision 2022

Stormwater Management Plan - Revised 2022

Column >	1	2	3	4	5	6	7	8	9	10	11
Row	BMP/Action	Description/Method of Implementation	Minimum Measures							Frequency/Schedule	Method of Evaluating Effectiveness
			PPP	PEP	IDEP	CSC	PCC	P2/011	TMDL		
1	Enforcement Response Procedures (ERPs)	See Chapter 29 of City of Kalamazoo Code of Ordinances - Stormwater and Chapter 30 of Code - Soil Erosion and Sedimentation Control; Appendix A of Code, Section 8.3H (Site Plan Review); Section 10 (Violations, Penalties and Enforcement).			X	X	X			As needed.	Enforcement as necessary.
2	Public Participation/ Involvement Program	See Section 8	X							See Section 6	See Section 8
3	Public Education Plan	See Section 6, Attachment A		X						See Section 6, Attachment A	See Section 6, Attachment A
4	Illicit Discharge Elimination Plan <i>KVGC BMP5</i>	IDEP outfall screening; Section 7, Attachment A, Figures 3 and 4, Tables 1 and 4.			X					See Section 7, Attachment; Attachment A - IDEP for 4-year schedule for dry weather outfall screening and retention/detention basins.	See Section 7, Attachment A - IDEP for dry weather screening program, and Section 8 of the 2022 Permit Renewal Application.
5	Construction Stormwater Runoff Control Program	Continue Soil Erosion & Sedimentation Control Program. Per Ordinances 1790, permit and enforce soil erosion and sedimentation controls associated with construction sites, per Part 31. Both the City's Code Enforcement Division and the Engineering Division are APAs for Part 61, addressing construction sites and street/utility work, respectively.				X				Continue APA status for enforcing Act 91.	See Construction Stormwater Runoff Control, permit application Questions 29-31 (Revision January, 2017), and Map of Designated Areas of Snow Paving and Street Sweeping. Continued certification for APA status; number of Permits issued; enforcement of Ordinances and policies; reduction in TSS.
6	Documentation of Post-Construction Stormwater Control for New and Redevelopment Projects.	Current: Performance Standards for Groundwater Protection within Wellhead Protection Capture Zones and Stormwater Quality Management (Ordinance No. 1826); Pending: Updates.					X			Continuous. Updated October 1, 2015.	See Section 8 of the 2022 Permit Renewal Application: Post-Construction Runoff Program (permit Questions 32-58). Effective use and enforcement of Ordinance; Ordinances and Performance Standards updates in 2015.
7	Continue Site Plan Review process using the Wellhead Protection Zoning Overlay Ordinance and Performance Standards Ordinance.	Per Ordinances 1825 and 1826, require stormwater pre-treatment prior to discharge into the City's MS4 or directly into the surface waters. Appendix A of Code, Section 8.3. Pending: Updates for Performance Standards.				X	X			Continuous. Updated October 1, 2015.	Number of site plans reviewed; number of required pre-treatment BMPs; number of natural BMPs; reduction in TSS; Ordinances and Performance Standards updates in 2015.
8	Employee and Contractor Training.	Continue use of the Excel DVD "Storm Watch Municipal Storm Water Pollution Prevention" and/or the EGLE DVD "Storm Water Employee Training" for employee training. In addition, the Technician 3 staff will watch the more specific IDEP focused DVD "Illicit Discharge Detection & Elimination: A Grate Concern."							X	All staff within 5 year Permit cycle. New hires within 1 year of hire. Contractors to begin viewing Storm Watch DVD in 2016 if they do not have staff with Stormwater Certification.	Number of employees trained; integration of stormwater control requirements into bid specifications. Contractor training/certification documentation.

Stormwater Management Plan - Revised 2022

Column >	1	2	3	4	5	6	7	8	9	10	11	
Row	BMP/Action	Description/Method of Implementation	Minimum Measures							Frequency/Schedule	Method of Evaluating Effectiveness	
			PPP	PEP	DEP	CSC	VCC	P2GH	TMDL			
9	List structural Stormwater Controls (pre-treatment units).	List by Table all municipally owned properties with stormwater structural controls (pre-treatment units).							X	X	Continuous maintenance of list of municipal properties and structural stormwater controls with locations.	See Procedure for Updating and Revising the Existence, Location, Structural Stormwater Controls and Potential to Discharge Pollutants to the Surface Waters of the State (January 2017). Completion of list with locational information, Section 9 of the 2022 Permit Renewal Application.
10	Inspect, perform maintenance, and evaluate all Stormwater Controls (pre-treatment units). <i>KVCC BMP#</i>	Annual year plan to inspect, perform maintenance and evaluate for effectiveness each City-owned stormwater control (pre-treatment unit) identified within the SWMP.							X	X	Annual Inspection & Maintenance	See Section 9 of the 2022 Permit Renewal Application
11	Continue street sweeping program. <i>KVCC BMP#</i>	Use up to three Egin Falcon series street sweepers to clean streets. A contractor removes the dumpsters that the sweepers deposit the debris in and delivers it to a Class II landfill. The same contractor tracks the volume of the debris accumulated.							X	X	On average, weekly sweeping for downtown area, and two to three times annually for the remaining City.	See Section 9 of the 2022 Permit Renewal Application
12	Continue Leaf Collection Program. <i>KVCC BMP#</i>	Residents are asked to rake their leaves in the late fall into the edge of the street in accordance with a published schedule. City crews then use a combination of tractors, front-end loaders and compactor trucks to collect the leaves. Cycle is repeated (weather permitting). Collected leaves are hauled and deposited at a city composting facility.							X	X	Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling."	Volume of leaves collected and disposed; estimated pounds of phosphorus prohibited from entering surface waters, and clogging storm sewers; continued Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling"; reduction in phosphorus loadings.
13	Continue Brush Pick-up Program. <i>KVCC BMP#</i>	A private contractor currently performs brush collection once a month from May through October on the same day as bulk trash (see below). Residents are asked to place bundled brush in the curb lawn for collection in accordance with the published monthly, bulk trash collection schedule.							X	X	Per published monthly schedule from May through October on the same day as bulk trash. Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling."	Volume of brush collected; estimated pounds of phosphorus prohibited from entering surface waters, and clogging storm sewer; continued Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling"; reduction in phosphorus loadings.
14	Continue Bulk Trash Collection Program.	A private contractor performs bulk trash collection for the City. Curbside collection is provided to residential properties with four units or less. All other properties must contract individually with private companies for trash removal. Residents place bulk trash near the curb for collection in accordance with a published schedule. A limit of 7.7 cubic yards per property per month is currently in place.							X		Monthly, per published schedule. Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling."	Volume of bulk trash collected; continued Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling."

Stormwater Management Plan - Revised 2022

Column >	1	2	3	4	5	6	7	8	9	10	11	
Row	BMP/Action	Description/Method of Implementation	Minimum Measures							Frequency/Schedule	Method of Evaluating Effectiveness	
			PPP	PEP	DEP	CSC	PCC	P2/0H	TMDL			
15	Catch Basin/Inlet Cleaning. <i>KVCC BMP7</i>	A dedicated vactor truck and crew for the city-wide cleanout plan of all catch basins/inlets, and manholes was initiated in 2018. Also, cleanings are performed on a requested and urgently needed basis (e.g., localized floodings, and associated with IDEP investigations as needed). Waste collected is by vactor trucks or by hand and are disposed of at the Wastewater Treatment Plant, unless it is determined that it be necessary to dispose of it at a Type II Landfill or by a certified hazardous waste hauler determined location.							X	X	In 2018, the COK obtained one dedicated vactor truck and crew for our city-wide cleanout plan of all catch basins/inlets, and manholes. One cycle of the cleanout plan is estimated between 10-20 years.	See section 9 of the 2022 Permit Renewal Application. All catch basins will need to be cleaned out when the sediment level in the bin reaches between 1/3 and 1/2 full based on sediment depth using rods.
16	Snow and Ice Removal Program. <i>KVCC BMP1</i>	The principal ice control material used is rock salt (NaCl). Liquid calcium chloride with Boost is added to increase salt adhesion to the road. Only under extremely icy conditions, three parts of sand are mixed with one part of salt to aid traction. This is a temporary measure until pavement can be exposed. Major streets are salted, as conditions permit. Local streets are salted only at intersections, stops, hills, and yields. In addition, the Kalamazoo Mall uses a snowmelt system instead of salting.							X		As needed.	See Section 9 of the 2022 permit renewal application. The amount of rock salt and sand mix used under appropriate conditions. Strategy to reduce the use of sand.
17	Continue Use of Enclosed Salt Storage Facility.	Rock salt is stored in an enclosed above-ground salt storage facility with a capacity of 7,000 tons, above the 100-year flood plain elevation.							X		Continuous: Use enclosed salt storage facility located at the Harrison Street Facility.	Continued use of enclosed above-ground facility; compliance with SWPPP for wastewater treatment plant.
18	Continue implementation of SWPPP for the 415 Stockbridge Avenue Facility.	Since this the first maintenance operation at this location meets the criteria for which a SWPPP is necessary, one was prepared and updated in 2021.							X		Continuous: Fleet Director or representative to maintain stormwater certified operator status, implement inspections and continue BMPs.	Section 9 of the 2022 Permit renewal application for inspection/maintenance programs. Acquired Stormwater Certified Operator License(s); number of inspections; number of BMPs implemented; overall SWPPP compliance.
19	Continue Recyclable Material Collection Program.	There are three components to the City's residential recycling program: weekly curbside residential collection for all residential properties with four units or less; multi-unit collection for those property owners or managers willing to participate; and a recycling drop-off facility is available to all citizens.							X		Annual evaluation to continue program. Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling."	Volume of materials collected and number of participants; continued Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling."
20	Continue Household Hazardous Waste Collection.	City residents are able to dispose of their hazardous waste at the Kalamazoo County Household Hazardous Waste Center, 1301 Lamont Avenue, free of charge. Each year the City enters into a contract with Kalamazoo County, which shares proportionally the cost with all participants to operate the program.							X		Re-evaluate and propose renewal of contract on an annual basis. Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling."	Continued contracts with Kalamazoo County; volume and type of materials collected and number of participants; continued Bi-Annual publication and COK website ads of "A View From the Curb: The City's Guide to Waste & Recycling."

Stormwater Management Plan - Revised 2022

Column >	1	2	3	4	5	6	7	8	9	10	11
Row	BMP/Action	Description/Method of Implementation	Minimum Measures							Frequency/Schedule	Method of Evaluating Effectiveness
			PPP	PEP	IDEP	CSC	PCC	P2/IGH	TMDL		
21	Environmental Safer Products.	The City Commission Policy for "Procurement of Recycled & Environmentally Friendly Products" is provided as Attachment 1.						X		Continue current policy	Continuation and/or enhancement of existing policy.
22	Waterway Vegetative Buffers.	Continue use of the City's "Lawn Care Guidelines for Parks, Greenspaces, and Along Waterways" and discussion with staff and seasonal employees during annual "training day."						X		Continue current policy	Continuation and/or enhancement of existing policy; number of existing vegetative buffers maintained and new ones initiated along waterways; incorporation of specifications into contracts.
23	Lawn Care Guidelines. <i>KVCC BMP3</i>	Continue use of the City's "Lawn Care Guidelines for Parks, Greenspaces, and Along Waterways" and discussion with staff and seasonal employees during annual "training day."						X		Continue current policy	Continuation and/or enhancement of existing policy. Effective communication with lawn maintenance employees and temporary seasonal hires regarding policy. Incorporation of specifications into contracts.
24	Reduction of Pesticides, Herbicides, and Fertilizers. <i>KVCC BMP4</i>	The City has a "Pesticide/Herbicide Advisory Committee" to monitor the use of pesticides and herbicides in the City and recommend policies and guidelines. Also, continue use of the City's "Lawn Care Guidelines for Parks, Greenspaces, and Along Waterways" and discussion with staff and seasonal employees during annual "training day."						X	X	Continue current policy. Review and consider updates/revisions.	See Section 9 of the 2022 Permit renewal application for pesticide information, and N. "TMDL Implementation Plan". Continuation and/or enhancement of existing policies.

PPP - Public Participation/Involvement Program

PEP - Public Education Program

CSC - Construction Stormwater Runoff Control Program

IDEP - Illicit Discharge Elimination Program

PCC - Post-Construction Control Stormwater Runoff Program

TMDL - Total Maximum Daily Load Implementation Plan

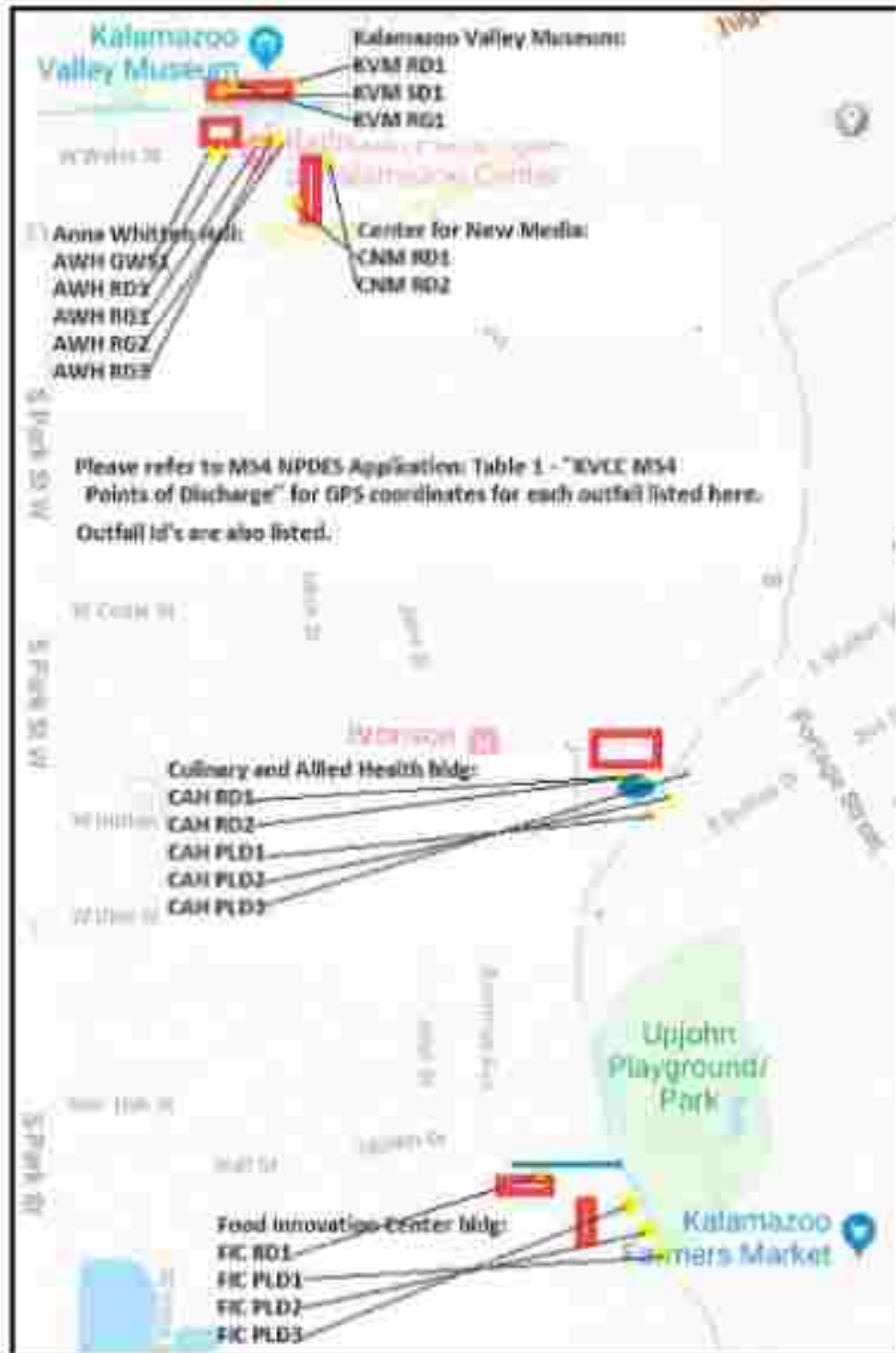
***Appendix D - KVCC Stormwater Sewer System Maps,
Stormwater Asset Identification, and Pre- and Post-Construction
Calculations***

KVCC STORMWATER SEWER SYSTEM LOCATION MAP



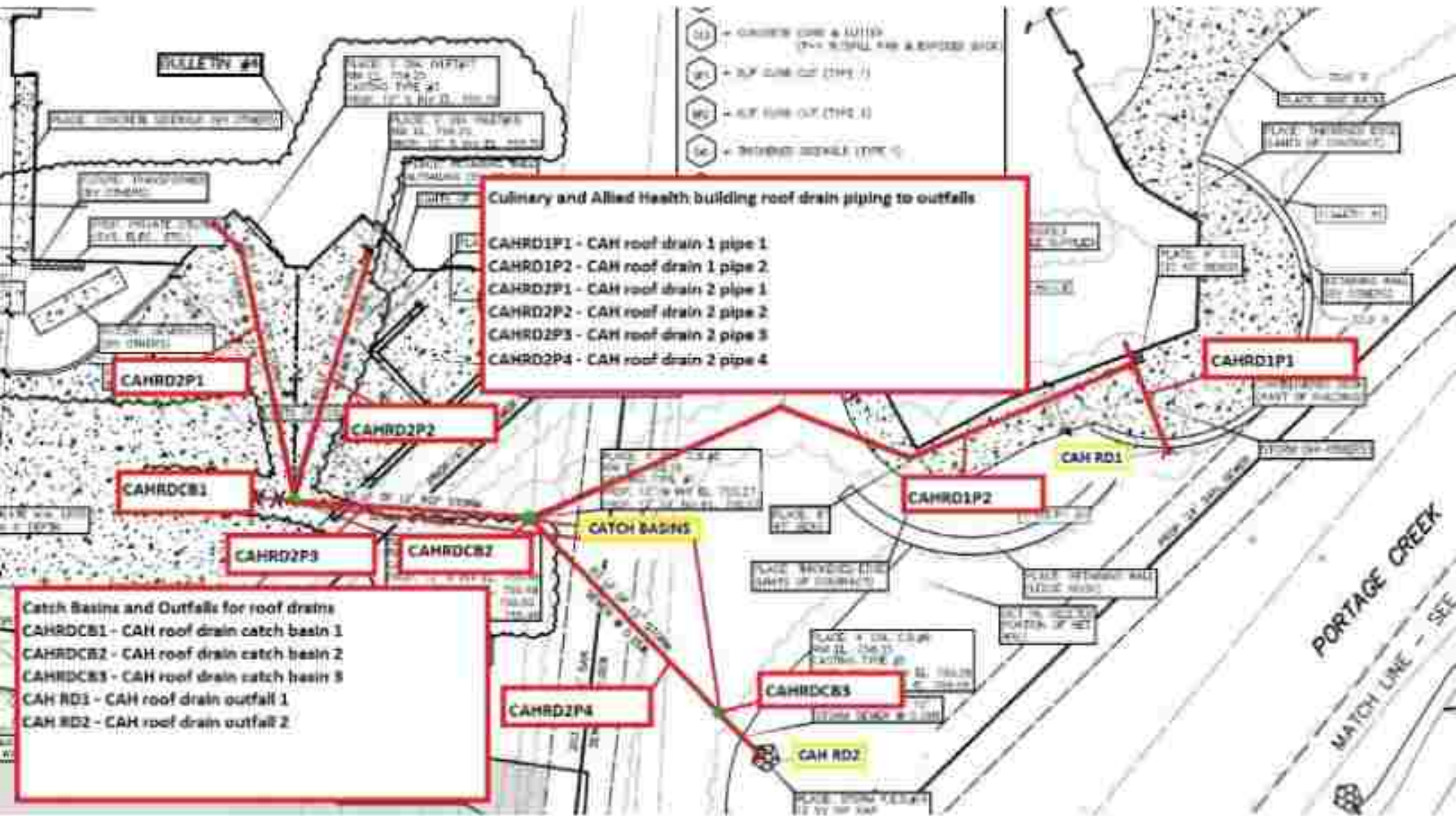
Blue shading indicates the property boundary of the facility location

KVCC BUILDINGS AND STORMWATER SYSTEM ASSET IDENTIFICATIONS



Buildings are outlined in red and assets have yellow symbols.

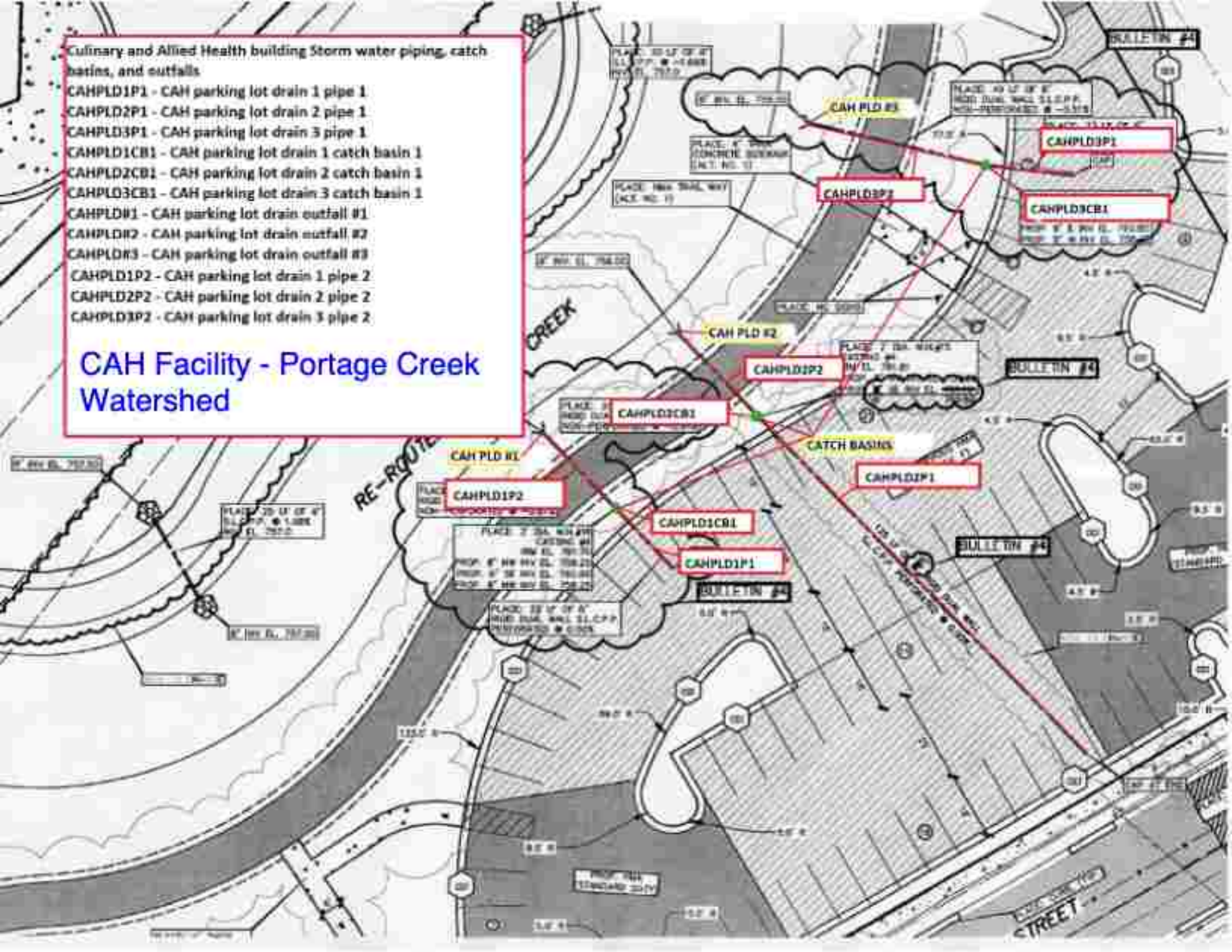
CAH Facility - Portage Creek Watershed



Culinary and Allied Health building Storm water piping, catch basins, and outfalls

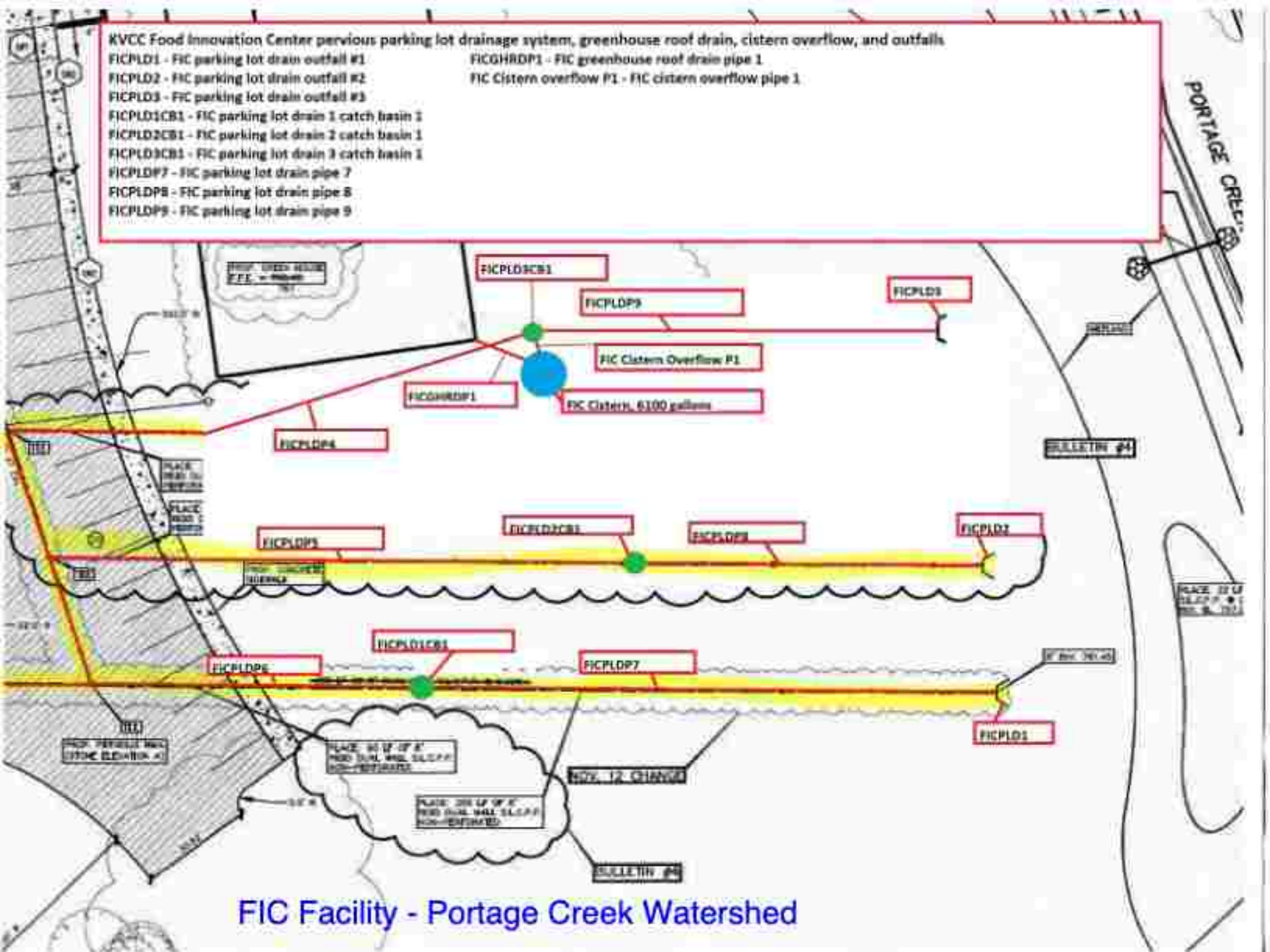
- CAHPLD1P1 - CAH parking lot drain 1 pipe 1
- CAHPLD2P1 - CAH parking lot drain 2 pipe 1
- CAHPLD3P1 - CAH parking lot drain 3 pipe 1
- CAHPLD1CB1 - CAH parking lot drain 1 catch basin 1
- CAHPLD2CB1 - CAH parking lot drain 2 catch basin 1
- CAHPLD3CB1 - CAH parking lot drain 3 catch basin 1
- CAHPLD#1 - CAH parking lot drain outfall #1
- CAHPLD#2 - CAH parking lot drain outfall #2
- CAHPLD#3 - CAH parking lot drain outfall #3
- CAHPLD1P2 - CAH parking lot drain 1 pipe 2
- CAHPLD2P2 - CAH parking lot drain 2 pipe 2
- CAHPLD3P2 - CAH parking lot drain 3 pipe 2

CAH Facility - Portage Creek Watershed



KVCC Food Innovation Center pervious parking lot drainage system, greenhouse roof drain, cistern overflow, and outfalls

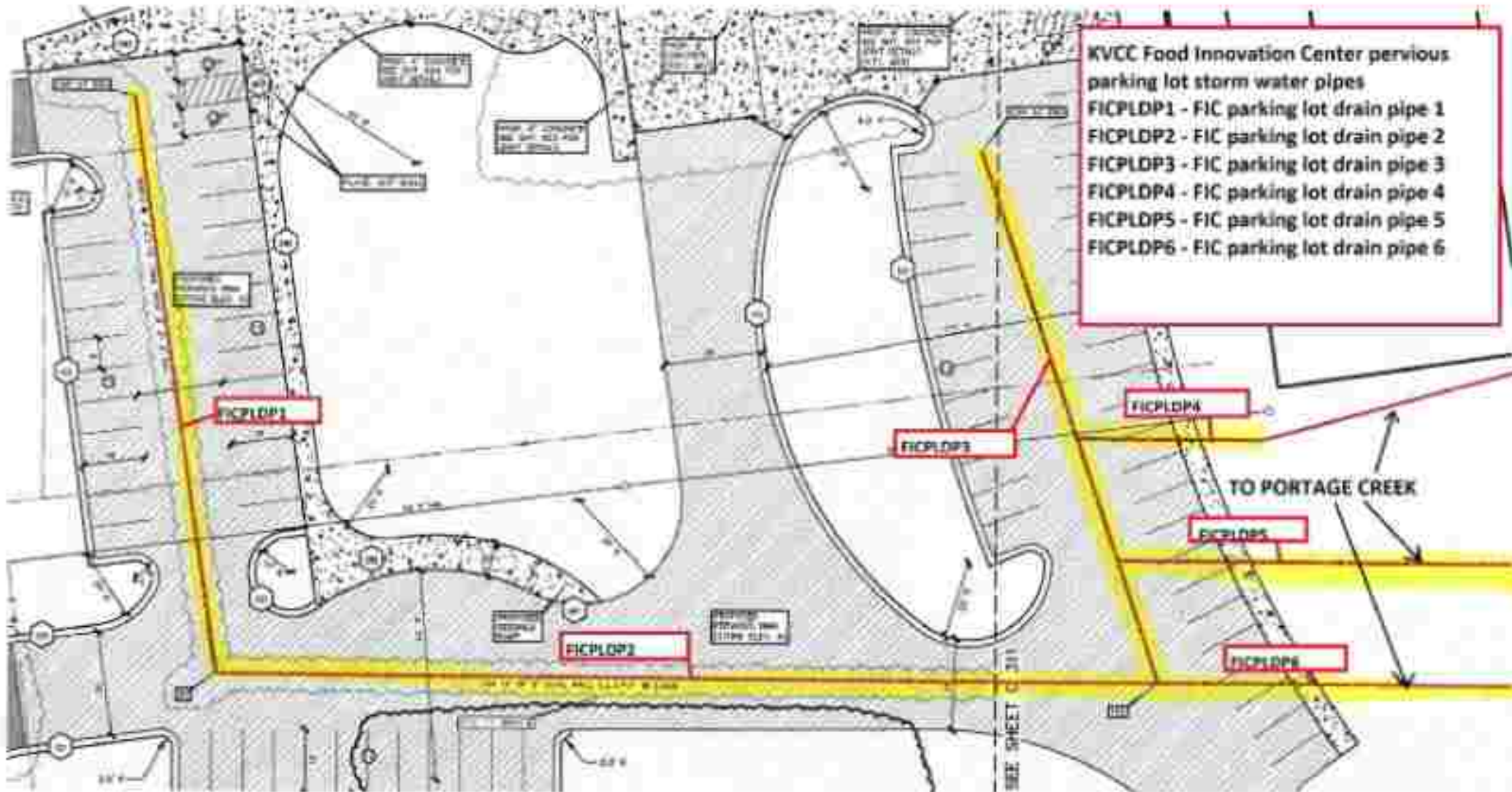
- FICPLD1 - FIC parking lot drain outfall #1
- FICPLD2 - FIC parking lot drain outfall #2
- FICPLD3 - FIC parking lot drain outfall #3
- FICPLD1CB1 - FIC parking lot drain 1 catch basin 1
- FICPLD2CB1 - FIC parking lot drain 2 catch basin 1
- FICPLD3CB1 - FIC parking lot drain 3 catch basin 1
- FICPLDP7 - FIC parking lot drain pipe 7
- FICPLDP8 - FIC parking lot drain pipe 8
- FICPLDP9 - FIC parking lot drain pipe 9
- FICGHRDP1 - FIC greenhouse roof drain pipe 1
- FIC Cistern overflow P1 - FIC cistern overflow pipe 1



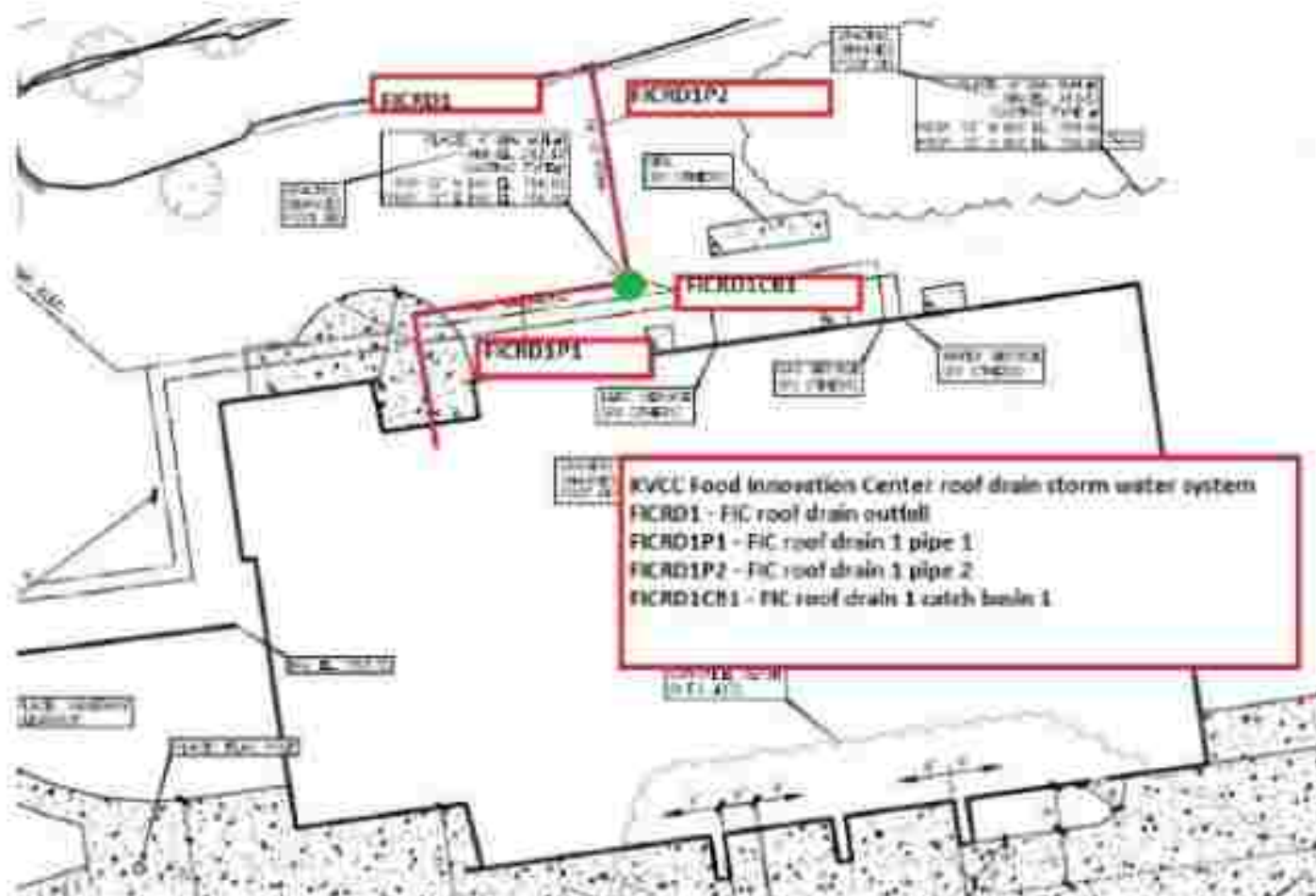
FIC Facility - Portage Creek Watershed

FIC Facility - Portage Creek Watershed

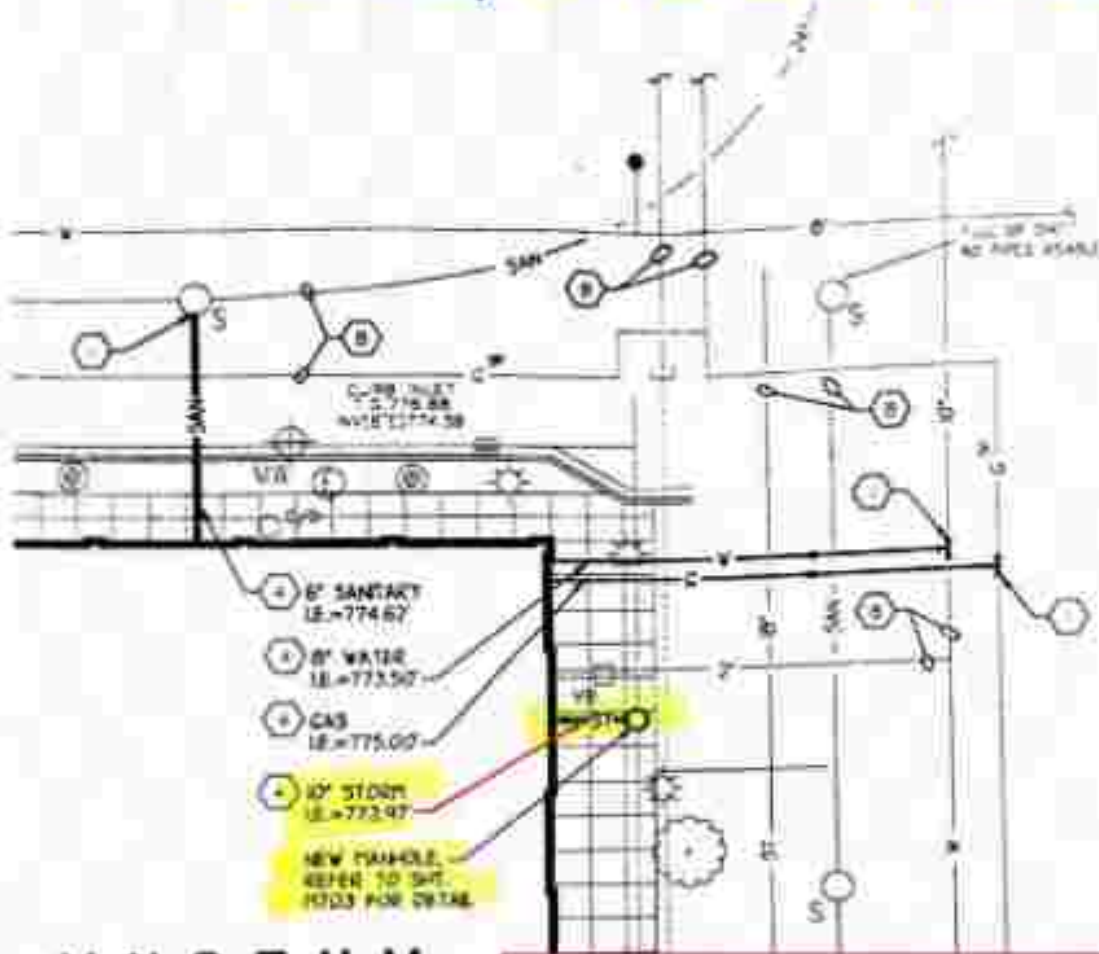
FOOD INNOVATION CENTER PERVIOUS PARKING LOT DRAINAGE SYSTEM



FIC Facility - Portage Creek Watershed



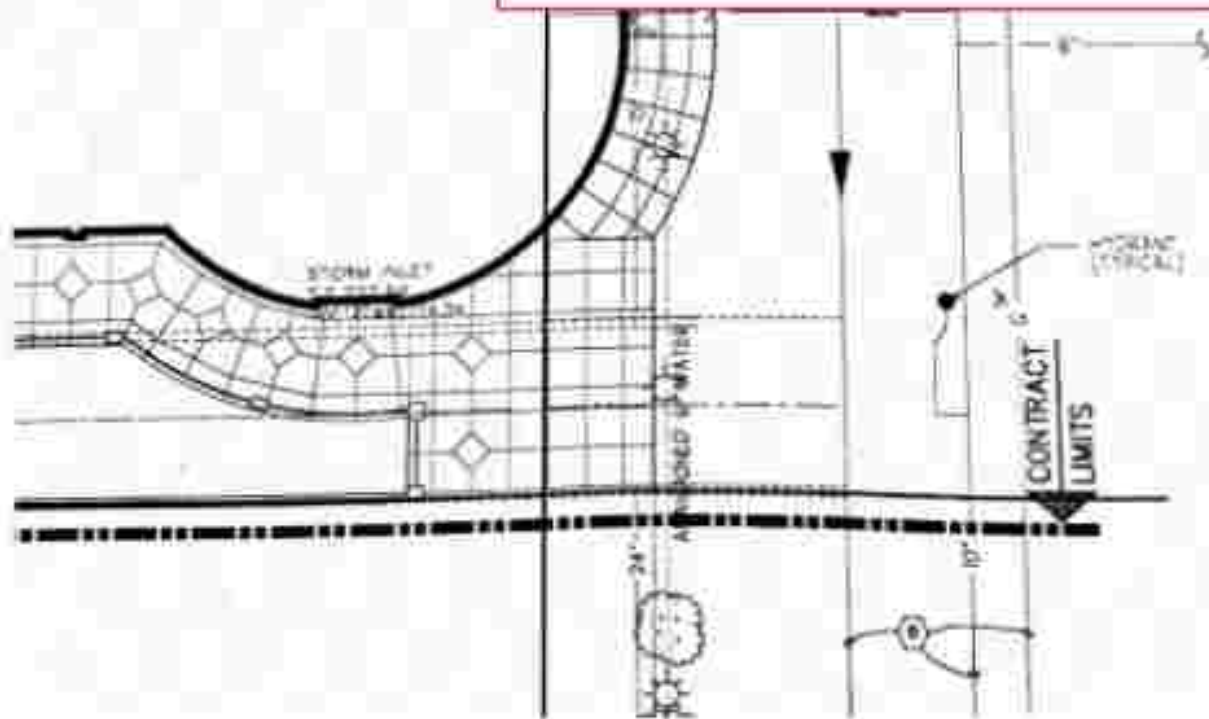
KVM Facility - Arcadia Creek Watershed



MUSEUM

24 - 775'-0"

Kalamazoo Valley Museum roof drain system KVMRD1 connects to city system under Mall sidewalk to City manhole.



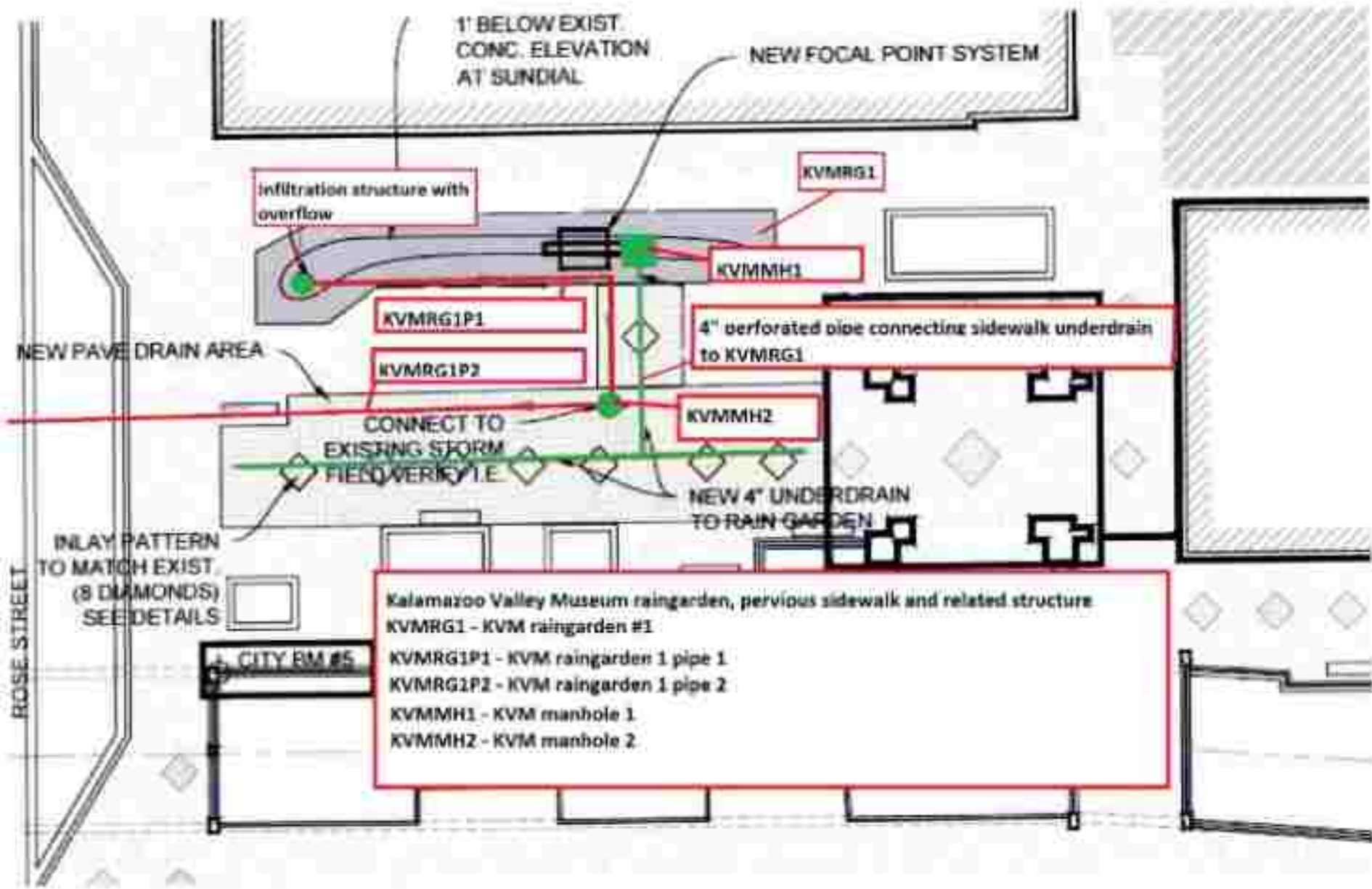
MECHANICAL SITE PLAN

THE NEW MUSEUM

KALAMAZOO VALLEY COMMUNITY COLLEGE

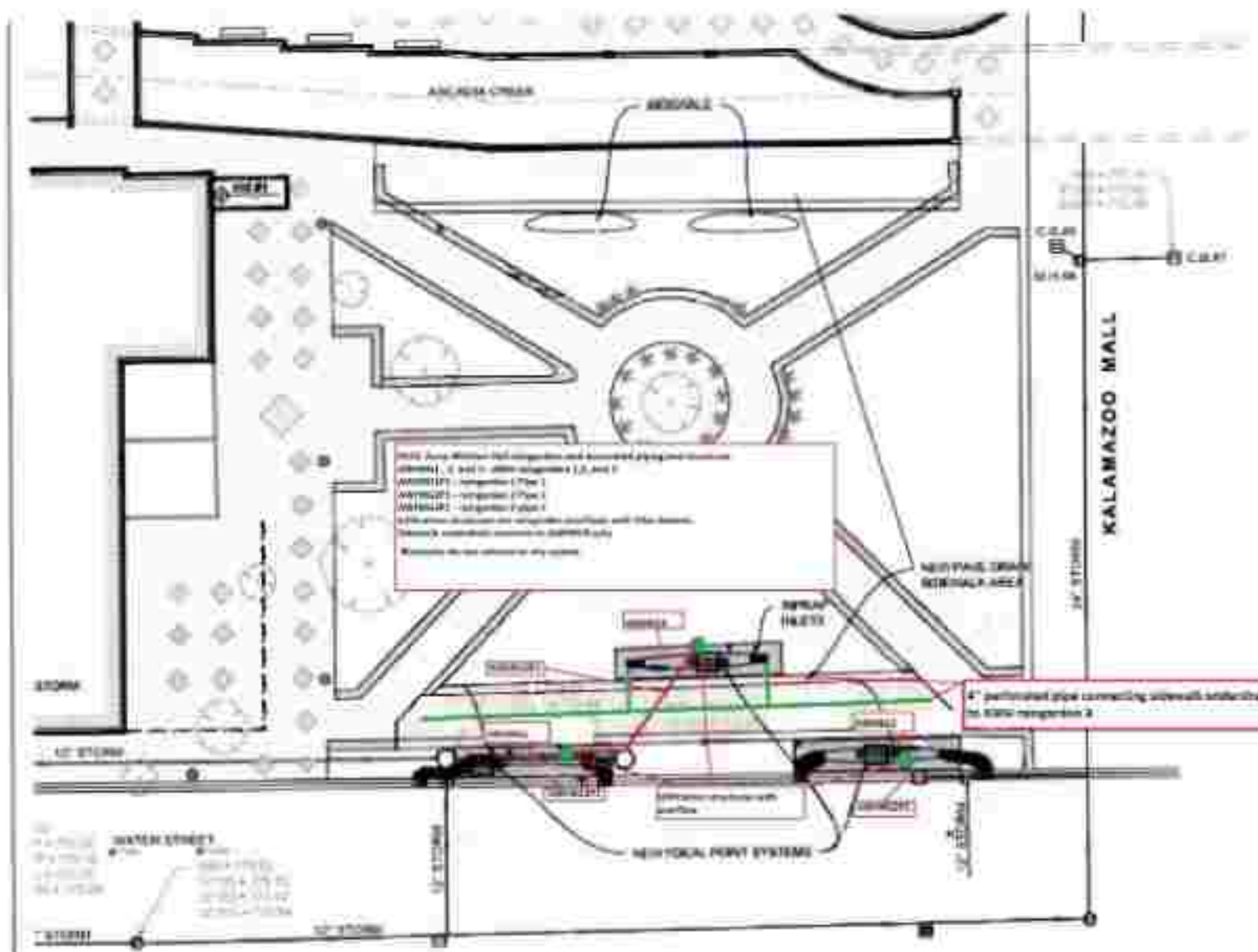
V. 15, 1993
1165 MUSEUM

KALAMAZOO, MICHIGAN



KVM Facility - Arcadia Creek Watershed

AWH Facility - Arcadia Creek Watershed



NOTE: Area within red lines and hatched along road is to be paved. (See 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

4" perforated pipe connecting sidewalk subsurface to storm sewer 2

BENCHMARK DATA

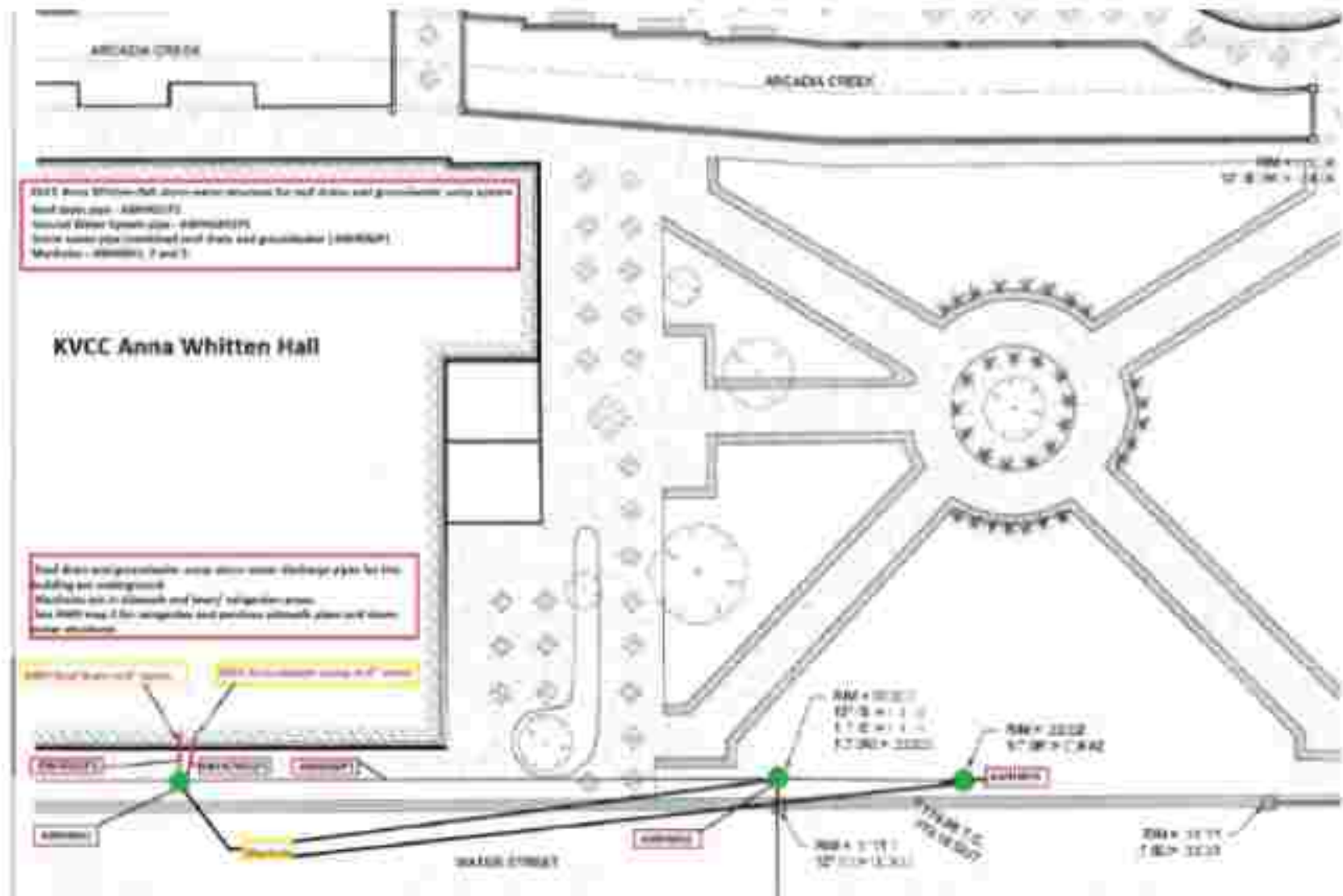
HORIZONTAL DATUM BASED ON A PUBLISHED COLLECTION OF BENCHMARKS (1/11/1988)

BM 1001 - 175.17'
 BM 1002 - 175.17'
 BM 1003 - 175.17'
 BM 1004 - 175.17'

STORM STRUCTURE DATA

<p>1001 - 175.17' 1002 - 175.17' 1003 - 175.17' 1004 - 175.17'</p>	<p>1005 - 175.17' 1006 - 175.17' 1007 - 175.17' 1008 - 175.17'</p>
---	---

AWH Facility - Arcadia Creek Watershed



Kalamazoo Valley Community College
Bronson Downtown Campus

Stormwater Runoff Calculations (Pre & Post Development)

Volume = Use 2 yr. 24 hr. Storm = 2.37"

Flow = Use $Q = c i A$ for 2 yr. Storm $i = 96 \div T + 16$ (Used 20 min. for time of concentration)

$c = .9$ for Impervious

$A =$ Area in Acres

$Q =$ cfs

FIB BEFORE

119,371 sq.ft. Impervious = 2.74 Acres

Flow = $c i A$

$$.9 \times 2.67 \times 2.74 \text{ A} = \underline{6.58 \text{ cfs}}$$

Volume = $c A \times 2.37'' = .9 \times 119,371 \text{ sq.ft.} \times 2.37'' \div 12'' = \underline{21,218 \text{ cft}}$

FIB AFTER

North 1/2 building plus 2 driveways = 13,266 sq.ft. = .30 Acres

All remaining is pervious pavement or drains to on-site detention/retention pond.

Flow = $c i A$

$$.9 \times 2.67 \times .3 = \underline{.72 \text{ cfs}}$$

Volume = $c A \times 2.37'' = .9 \times 13,266 \text{ sq.ft.} \times 2.37'' \div 12'' = \underline{2,358 \text{ cft}}$

CMH BEFORE

26,302 sq.ft. Impervious = .60 Acres

Flow = $c i A$

$$.9 \times 2.67 \times .6 A = \underline{1.44 \text{ cfs}}$$

$$\text{Volume} = c A \times 2.37'' = .9 \times 26,302 \text{ sq.ft.} \times 2.37'' \div 12'' = \underline{4,675 \text{ cft}}$$

CMH AFTER

2 driveways of impervious = 4,650 sq.ft. = .11 Acres

All remaining drains to pervious parking lot.

Flow = $c i A$

$$.9 \times 2.67 \times .11 A = \underline{.26 \text{ cfs}}$$

$$\text{Volume} = c A \times 2.37'' = .9 \times 4,650 \text{ sq.ft.} \times 2.37'' \div 12'' = \underline{827 \text{ cft}}$$

CULINARY & DUTTON PARKING BEFORE

94,098 sq.ft. Impervious = 2.16 Acres

Flow = $c i A$

$$.9 \times 2.67 \times 2.16 A = \underline{5.19 \text{ cfs}}$$

$$\text{Volume} = c A \times 2.37'' = .9 \times 94,098 \text{ sq.ft.} \times 2.37'' \div 12'' = \underline{16,726 \text{ cft}}$$

CULINARY & DUTTON PARKING AFTER

824 sq.ft. Impervious = .02 Acres

All remaining drains to pervious parking or to detention/retention pond.

Flow = $c i A$

$$.9 \times 2.67 \times .02 A = \underline{.05 \text{ cfs}}$$

$$\text{Volume} = c A \times 2.37'' = .9 \times 824 \text{ sq.ft.} \times 2.37'' \div 12'' = \underline{146 \text{ cft}}$$

*Appendix E - Dry Weather Screening Form for Field
Documentation and IDEP Follow-up Investigation Report Form*

**FACILITY: KALAMAZOO VALLEY COMMUNITY COLLEGE
DRY WEATHER SCREENING FORM**

Outfall ID: _____ Date: / / Time: _____ am/pm By: _____

Weather Conditions: _____ Temp: _____ Wind: _____

Description and condition of outfall structure: _____

Location GPS? **Y/N** Picture of Outfall? **Y/N**

Observation	Y/N	Comments	Follow Up? Y/N
Dry Weather Flow?			
Water Clarity?			
Odor?			
Suds?			
Oil Sheen?			
Floatables?			
Bactl Sheen?			
Algae?			
Slimes?			
Staining of banks?			
Unusual veg.?			
Color?			
Sample Taken?			

If a sample was taken, record results below:

Parameter	Value	Units
Temperature		°C
pH		S.U.
Fluoride		mg/L
Surfactant		mg/L
Ammonia		mg/L
Fecal Coliform		#/100 mL

FACILITY: KALAMAZOO VALLEY COMMUNITY COLLEGE

IDEP FOLLOWUP INVESTIGATION REPORT

FACILITY INFORMATION

Facility Name:

Facility Address:

Outfall ID:

INSPECTION INFORMATION

Inspection Start Date:

Inspection End Date:

KVCC Inspector(s):

Inspection Summary/Notes (include information on suspected source):

Explain Action Required: Yes / No / NA

Due Date:

Was the source eliminated? Yes / No

Is Enforcement Action Required? Yes / No

Comments:

Completed by _____

Date: _____

***Appendix F - Annual Phase II Municipal Separate Storm Sewer
System Report***

Kalamazoo Valley Community College

Annual Phase II Municipal Separate Storm Sewer System Report

Address:

Reporting Period:

PURPOSE:

The purpose of this report is to summarize Phase II Municipal Separate Storm Sewer System (MS4) permit activities between October 1, 20__ and September 30, 20__ for Kalamazoo Valley Community College. Decisions, actions, and results performed are explained below:

A. Environment Response Plan (ERP)

(Choose between the two options below)

No actions to report.

Or

Report actions here.

B. Public Education Plan (PEP) – See PEP table for specific actions, Appendix B.

C. Illicit Discharge Elimination Program (IDEP)

<i>IDEP Action Description</i>	<i>Actions Y/No/NA</i>	<i>Explanation</i>
Number of outfalls/points of discharge?		
Was dry weather screening performed?		
Any illicit discharges identified this period? If so, how many?		
Were illicit discharges eliminated within 90 days? If not, explain when or include a plan.		
Was IDEP training provided in accordance with the program? If yes, provide documentation. If no, provide explanation.		

Summarize the evaluation and effectiveness:		
Will you continue to implement the approved IDEP during the next reporting cycle? (Respond: yes, yes with changes, or no) *If yes with changes or no, submit revisions.		

D. Construction Stormwater Runoff Control

<i>Construction Stormwater Runoff Control Action Description</i>	<i>Actions #/Yes/No/NA</i>	<i>Explanation</i>
Were any Soil Erosion and Sedimentation Control (SESC) permits obtained per Ordinance?		
Did soil or sediment discharge into the MS4 from construction activity? If so, was the City of Kalamazoo notified?		

E. Post-Construction Stormwater Runoff Program

<i>Post-Construction Stormwater Runoff Control Action Description</i>	<i>Actions #/Yes/No/NA</i>	<i>Explanation</i>
Were post-construction performance standards applied to all projects subject to the City of Kalamazoo stormwater ordinance and performance standards?		
Were any site plans reviewed and approved to ensure compliance with the City of Kalamazoo stormwater ordinance and performance standards? If no, describe exceptions.		

F. Pollution Prevention and Good Housekeeping Program

Were the inspection, maintenance, and cleaning activities for the following structural controls implemented in accordance with the approved procedure? Provide documentation.

<i>Structural Control Type</i>	<i>Inspection & Maintenance Activities Conducted in Accordance with Approved Procedures? (Yes/No)</i>	<i>If no, provide explanation</i>	<i>Certify inspection and/or maintenance date</i>
Detention Basins			
Oil/Water Separators			
Secondary Containment			
Vegetated Swales			
Infiltration Basins/Trenches			

Porous Pavement			
Rain Gardens			
Other Structural Controls: (Add space as needed)			

Are you implementing BMPs in accordance with your approved procedures to prevent or reduce pollutant runoff from the following operating and maintenance activities?

Activity	BMPs Implemented? Yes/No/NA	If no, provide explanation
Road, Parking Lot, and Sidewalk Maintenance (e.g. pothole, sidewalk, and curb and gutter repair)		
Cold Weather Operations (e.g. plowing, sanding, application of deicing agents, and snow pile disposal)		
Maintenance of college-owned vehicles, including certifying that no vehicles are washed with a discharge to the regulated MS4.		

Are you following the procedures/actions below?

Activity	Procedures followed? Yes/No/NA	If no, provide explanation
Was P2/GH training provided in accordance with the program? If yes, provide documentation. If no, provide explanation		
Contractor training: provide training materials/information in bid documents and/or preconstruction meetings.		
Is your pesticide applicator certified by the State of Michigan		

G. Total Maximum Daily Load (TMDL)

Activity	BMPs Implemented? Yes/No/NA	If no, provide explanation
Determine innovative and ecologic actions to meet TMDL goals		
Continue with overall TMDL public events		
Address TMDL Phosphorus reductions, Pollution Prevention & Good Housekeeping		

Appendix G - Permit Application for Part 91 Soil Erosion and Sedimentation Control Form

APPLICANT RESPONSIBILITIES

All construction or work for which a permit is required shall be subject to inspection by the City and all such construction or work shall remain accessible and exposed for inspection purposes until approved by the City.

- It shall be the duty of the permit applicant to cause the work to remain accessible and exposed for inspection purposes.
- It shall be the duty of the person doing the work authorized by permit to notify the Building Official that such work is ready for inspection.
- Every request for inspection must be scheduled at least one (1) working day before such inspection is desired.
- It shall be the duty of the person requesting any inspections required by this code to provide access to and means for inspection of such work.
- Final inspection: To be made after all finished work is completed.
- Other inspections: In addition to the required inspections specified above, the City may make or require other inspections of any work to ascertain compliance with the provisions of the Soil Erosion and Sedimentation Control (SESC) and other laws and ordinances which are enforced by the City.
- Re-inspections: A re-inspection fee may be assessed when such portion of work for which a re-inspection is scheduled, but is not complete or when required corrections are not made.

CERTIFICATE OF COMPLETION

- Certificate of Completion: It is the applicant's responsibility to contact the City to request a Certificate of Completion after all final inspections have been conducted and approved.
- Issuance: After the City inspects the work and finds no violations of the provisions of applicable codes or other laws and ordinances that are enforced by the code-enforcement agency, the City shall issue a Certificate of Completion.

EXPIRATION OF PERMIT

- A permit remains valid as long as work is progressing and inspections are requested and conducted. A permit shall become invalid if the authorized work is not commenced within sixty days (60) after issuance of the permit or if the authorized work is suspended or abandoned for a period of sixty days (60) after the time of commencing the work.

BA PAY INV

PERMIT APPLICATION for Part 91 SOIL EROSION AND SEDIMENTATION CONTROL (SESC Permit)



DEVELOPMENT CENTER
415 STOCKBRIDGE AVENUE
KALAMAZOO, MICHIGAN 49001
(268) 337-8020

Required documents/documentation

A Soil Erosion and Sediment Control Plan including drawings and documentation to clearly describe the proposed earth change which describes steps to be taken to effectively reduce accelerated soil erosion and sediment or both, and which shall include but not be limited to the following information:

- A MAP AT A SCALE OF NOT MORE THAN 200 FEET TO THE INCH INCLUDING A LEGAL DESCRIPTION AND SITE LOCATION SKETCH WHICH INCLUDES THE PROXIMITY OF ANY PROPOSED EARTH CHANGES TO LAKES OR STREAMS, OR BOTH; AND CONTOUR INTERVALS OR SLOPE DESCRIPTION.
- A SOILS SURVEY OR WRITTEN DESCRIPTION OF THE SOIL TYPES OF THE EXPOSED LAND AREA CONTEMPLATED FOR EARTH CHANGE.
- A DESCRIPTION AND LOCATION OF THE PHYSICAL LIMITS OF EACH PROPOSED EARTH CHANGE.
- A DESCRIPTION AND LOCATION OF ALL EXISTING AND PROPOSED ON-SITE DRAINAGE FACILITIES.
- THE TIMING A SEQUENCE OF EACH PROPOSED EARTH CHANGE.
- A DESCRIPTION AND THE LOCATION OF ALL PROPOSED TEMPORARY SOIL EROSION CONTROL MEASURES.
- A DESCRIPTION AND LOCATION OF ALL PROPOSED PERMANENT SOIL EROSION CONTROL MEASURES.
- A PROGRAM PROPOSAL FOR THE CONTINUED MAINTENANCE OF ALL PERMANENT SOIL EROSION CONTROL FACILITIES WHICH REMAIN AFTER THE PROJECT COMPLETION, INCLUDING THE DESIGNATION OF THE PERSON RESPONSIBLE FOR THE MAINTENANCE. (SUCH MAINTENANCE RESPONSIBILITIES SHALL BECOME PART OF ANY SALES OR EXCHANGE AGREEMENT FOR THE LAND ON WHICH THE PERMANENT SOIL EROSION CONTROL MEASURES ARE LOCATED)

PROPERTY CLASSIFICATION: **SOIL EROSION & SEDIMENTATION CONTROL PERMIT WILL NOT BE ISSUED** THIS DEPARTMENT DOES NOT DISCRIMINATE AGAINST ANY INDIVIDUAL OR GROUP BECAUSE OF RACE, SEX, RELIGION, AGE, NATIONAL ORIGIN, COLOR, MARITAL STATUS, HANDICAP, OR POLITICAL BELIEFS.

1. APPLICANT (Please check if applicant is the owner or designee (agent))

NAME: INDIVIDUAL CORPORATION

ADDRESS: _____

CITY: _____ STATE: _____ COUNTY: _____

2. LOCATION

ADDRESS: _____ CITY: _____ STATE: _____ COUNTY: _____

SECTION: _____ SECTION TO BE CHANGED: _____ OTHER SECTIONS: _____

3. PROPOSED EARTH CHANGE

PROJECT TYPE: RESURFACE ALTER ROAD FILL/EXCAVATE BRIDGE OTHER: _____

ESTIMATE PROJECT COST: _____ DATE OF COMPLETION: _____

APPROXIMATE AREA OF PROJECT: (Acres, Square Feet) _____ PROJECT IN PHASE: _____ PERMITS/OTHER APPROVALS: _____

4. SOIL EROSION AND SEDIMENTATION CONTROL PLAN (Refer to Rule 205.110)

CONTROL CODE OF EROSION/SEDIMENTATION: _____

Note: _____ copies sets of plans must be attached.

DATE PREPARED: _____ DATE REVIEWED: _____

5. PARTY RESPONSIBLE FOR EARTH CHANGE

NAME OF PARTY RESPONSIBLE FOR EARTH CHANGE: _____ ADDRESS: _____

CITY: _____ STATE: _____ COUNTY: _____

PHONE: _____

NAME OF PERSONS: (Include Name, Title, Address, Phone Number)

NAME: _____ CITY: _____ STATE: _____ COUNTY: _____

6. PERFORMANCE BOND

BOND TYPE: CASH CHECK/NOTE BOND COMPANY OTHER: _____

NAME OF BOND COMPANY: _____

ADDRESS: _____ CITY: _____ STATE: _____ COUNTY: _____

I hereby affirm that the above information is accurate and that I will comply with the above described earth change in accordance with Part 01, Soil Erosion/Sedimentation Control, of the Natural Resources and Environmental Protection Act, 1984 PA 451, as amended, applicable local ordinances, and the documents accompanying this application.

APPLICANT SIGNATURE: _____ DATE: _____

DESIGNATED AGENT SIGNATURE: _____ DATE: _____

GENERAL CONDITIONS

In accordance with Rule 1700 promulgated under the authority of Part 01, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act, 1984 PA 451, as amended, and in addition to the information on the attached plans and special conditions, the following general conditions apply to the earth change authorized by this permit:

- Design, construct, and complete the earth change in a manner that limits the exposed area of disturbed land for the shortest period of time.
- Remove sediment caused by accelerated soil erosion from runoff water before it leaves the site of the earth change.
- Temporary or permanent control measures shall be designed and installed to convey water around, through, or from the earth change at a non-erosive velocity.
- Install temporary soil erosion and sedimentation control measures before or upon commencement of the earth change activity and maintain the measures on a daily basis. Remove temporary soil erosion and sedimentation control measures after permanent soil erosion measures are in place and the area is stabilized. ("Stabilized" means the establishment of vegetation or the proper placement, grading, or covering of soil to ensure its resistance to soil erosion, sliding, or other earth movement.)
- Complete permanent soil erosion control measures for the earth change within five calendar days after final grading or upon completion of the final earth change. If it is not possible to permanently stabilize the earth change, then maintain temporary soil erosion and sedimentation control measures until permanent soil erosion control measures are in place and the area is stabilized.

SPECIFIC CONDITIONS

Section 5: Attachment A

City of Kalamazoo General

Stormwater Management Plan (SWMP)

Stormwater Management Plan - Revised 3-17-2023

Column >	1	2	3	4	5	6	7	8	9	10	11
Row	BMP/Action	Description/Method of Implementation	Minimum Measures						Frequency/Schedule	Method of Evaluating Effectiveness	
			PPP	PEP	IDEP	CSC	PCO	P2UH	TMDL		
1	Enforcement Response Procedures (ERPs)	See Chapter 29 of City of Kalamazoo Code of Ordinances - Stormwater and Chapter 30 of Code - Soil Erosion and Sedimentation Control; Appendix A of Code, Section 8.2H (Site Plan Review); Section 10 (Violations, Penalties and Enforcement)			X	X	X			As needed;	Enforcement as necessary;
2	Public Participation/Involvement Program	See COK MS4 NPDES Permit Application Section 3.	X							See COK MS4 NPDES Permit Application Section 5.	See COK MS4 NPDES Permit Application Section 5.
3	Public Education Plan	See COK MS4 NPDES Permit Application/Section 6, Attachment A.		X						See COK MS4 NPDES Permit Application Section 6, Attachment A.	See COK MS4 NPDES Permit Application/Section 6, Attachment A.
4	illicit Discharge Elimination Plan KVCC BAPPS	IDEP outlet screening, Section 7, Attachment A, Pages 9 and 4 , Tables 7 and 4 .			X					See COK MS4 NPDES Permit Application Section 7, Attachment, Attachment A - IDEP for 4-year schedule for dry weather outlet screening and reinspection/inspection basis.	See COK MS4 NPDES Permit Application Section 7, Attachment A - IDEP for dry weather screening program, and Section 8 of the 2022 Permit Renewal Application.
5	Construction Stormwater Runoff Control Program	Continue Soil Erosion & Sedimentation Control Program, per Ordinance 1790, permit and enforce soil erosion and sedimentation controls associated with construction sites. For Part 31, the City's Code Enforcement Division is a Municipal Enforcing Agency that issues permits and conducts enforcement. The Engineering Division is an Authorized Public Agency, which does not issue permits but has procedures in place that need to be followed internally.				X				Continue MEA status for enforcing Act 31.	See COK MS4 NPDES Permit Application Section 8, Construction Stormwater Runoff Control, permit application Questions 28-31 (Revision January, 2017), and Map of Designated Areas of Snow Plowing and Street Sweeping. Continue certification for APA status; number of Permits issued; enforcement of Ordinances and policies; reduction in TSS.
6	Documentation of Post-Construction Stormwater Control for New and Redevelopment Projects.	Current: Performance Standards for Groundwater Protection with Wetland Protection Capture Zones and Stormwater Quality Management (Ordinance Nos. 2056, 2057 & 1825), 2022.					X			Continuous; Update October 17, 2022.	See COK MS4 NPDES Permit Application Section 9, Post-Construction Runoff Program (permit Questions 30-33); Effective use and enforcement of Ordinances and Performance Standards, 2022.

Stormwater Management Plan - Revised 3-17-2023

Column >	1	2	3	4	5	6	7	8	9	10	11
Row	BMP/Action	Description/Method of Implementation	Minimum Measures							Frequency/Schedule	Method of Evaluating Effectiveness
			PPP	PEP	IDEP	CSC	PCQ	P231H	TMDL		
7	Continue Site Plan Review process using the Wellhead Protection Zoning Overlay Ordinance and Performance Standards Ordinance.	Per Ordinances 2006, 2007 and 1835, require stormwater pre-treatment prior to discharge into the City's MS4 or directly into the surface waters. Appendix A of Code, Section 8.3. Pending: Updates for Performance Standards.				X	X			Continuous. Updated October 17, 2022.	Number of site plans reviewed; number of required pre-treatment BMPs; number of natural BMPs; reduction in TSS; Ordinances and Performance Standards, 2022.
8	Employee and Contractor Training.	Continue use of the Excel DVD "Storm Water Municipal Storm Water Pollution Prevention" and/or the EOLE DVD "Storm Water Employee Training" for employee training. In addition, the Technician II staff will watch the more specific IDEP focused DVD "NCC Discharge Detection & Elimination A Goal Concern."						X		All staff within 5 year Permit cycle. New hires within 1 year of hire. Contractors to begin viewing Storm Water DVD in 2016 if they do not have staff with Stormwater Certification.	Number of employees trained; integration of stormwater control requirements into bid specifications; Contractor training/certification documentation.
9	List structural Stormwater Controls (pre-treatment units).	List by Tract all municipally owned properties with stormwater structural controls (pre-treatment units).						X	X	Continuous maintenance of list of municipal properties and structural stormwater controls with locations.	See Procedure for Updating and Reviewing the Existence, Location, Structural Stormwater Controls and Potential to Discharge Pollutants to the Surface Waters of the State (January 2017) Completion of list with locational information. See COK MS4 NPDES Permit Application Section 9.
10	Inspect, perform maintenance, and evaluate all Stormwater Controls (pre-treatment units). KVCC BMP#1	Annual year plan to inspect, perform maintenance and evaluate for effectiveness each City-owned stormwater control (pre-treatment unit) identified within the SWMP.						X	X	Annual Inspection & Maintenance	See COK MS4 NPDES Permit Application Section 9.
11	Continue Street Sweeping Program. KVCC BMP#2	Use up to three Egan Petrusi walk-behind sweepers to clean streets. A contractor removes the dumpsters that the sweepers deposit the debris in and delivers it to a Class II landfill. The same contractor tracks the volume of the debris accumulated.						X	X	Approximately May to mid-October, monthly sweeping for the downtown area, and sweeping every 2-3 weeks for the remainder of the City.	See COK MS4 NPDES Permit Application Section 9.
12	Continue Leaf Collection Program. KVCC BMP#3	Residents are asked to rake their leaves in the lawn and into the edge of the street in accordance with a published schedule. City crews that use a combination of bucket, front-end loaders and compactor trucks to collect the leaves. Cycle is repeated (weather permitting). Collected leaves are hauled and deposited at a city composting facility.						X	X	Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling."	Volume of leaves collected and deposited; estimated pounds of phosphorus prohibited from entering surface waters and clogging storm sewers; continued Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling"; reduction in phosphorus loadings.

Stormwater Management Plan - Revised 3-17-2023

Column >	1	2	3	4	5	6	7	8	9	10	11	
Row	BMP/Action	Description/Method of Implementation	Minimum Measures							Frequency/Schedule	Method of Evaluating Effectiveness	
			PPP	PEP	IDEF	CSC	POC	P2UH	TMDL			
13	Continue Brush Pick-up Program. KVCC BMP3	A private contractor currently performs brush collection once a month from May through October on the same day as bulk trash (see below). Residents are asked to place bundled brush in the curb lawn for collection in accordance with the published monthly bulk trash collection schedule.							X	X	Per published monthly schedule from May through October on the same day as bulk trash. Bi-Annual publication of "A View From the Curb The City's Guide to Waste & Recycling."	Volume of brush collected; estimate pounds of phosphorus prohibited from entering surface waters, and strapping curb sewer; continued Bi-Annual publication of "A View From the Curb The City's Guide to Waste & Recycling"; reduction in phosphorus loadings.
14	Continue Bulk Trash Collection Program.	A private contractor performs bulk trash collection for the City. Curbside collection is provided to residential properties with four units or less. All other properties must contact individually with private companies for trash removal. Residents place bulk trash near the curb for collection in accordance with a published schedule. A limit of 7.7 cubic yards per property per month is currently in place.							X		Monthly per published schedule. Bi-Annual publication of "A View From the Curb The City's Guide to Waste & Recycling."	Volume of bulk trash collected; continued Bi-Annual publication of "A View From the Curb The City's Guide to Waste & Recycling."
15	Catch Basin/Inlet Cleaning. KVCC BMP7	A dedicated sector truck and crew for the city-wide cleanout plan of all catch basins/inlets, and manholes was initiated in 2016. Also, cleanings are performed on a requested and urgently needed basis (e.g., localized flooding) and associated with IDEP investigations as needed. Waste collected is by vac-trucks or by hand and are disposed of at the Wastewater Treatment Plant, unless it is determined that it be necessary to dispose of it at a Type II landfill or by a certified hazardous waste hauler determined location.							X	X	In 2018, the COK obtained one dedicated vac-truck and crew for our city-wide cleanout plan of all catch basins/inlets, and manholes. One cycle of the cleanout plan is estimated between 10-20 years.	See COK MS4 NPDES Permit Application Section 3: All catch basins will need to be cleaned out when the sediment level in the sub-waters between 113 and 112 ft based on sediment depth using rods.
16	Snow and Ice Removal Program. KVCC BMP1	The primary ice control material used is rock salt (NaCl). Liquid calcium chloride with Boost is added to increase salt adhesion to the road. Only under extremely icy conditions, three parts of sand are mixed with one part of salt to assist traction. This is a temporary measure until pavement can be exposed. Major streets are salt/sanded, as conditions permit. Local streets are salted only at intersections, stops, hills, and yards. In addition, the Kalamazoo State uses a snowmelt system instead of salting.							X		As needed.	See COK MS4 NPDES Permit Application Section 9 Map of Maintenance Sections for Street Sweeping and Snow Plowing. Also see Section 9: MDOT ACT11 COK Road System Classification Map. The amount of rock salt and sand mix used under appropriate conditions. Strategy to reduce the use of salt.
17	Continue Use of Enclosed Salt Storage Facility.	Rock salt is stored in an enclosed above-ground salt storage facility with a capacity of 7,000 tons, above the 100 year flood plain elevation.								X	Continuous: Use enclosed salt storage facility located at the Hanson Street Facility.	Continued use of enclosed above-ground facility; compliance with SWPPP for wastewater treatment plant.
18	Continue implementation of SWPPP for the 415 E. Stockbridge Avenue Facility.	The best maintenance operation at this location meets the criteria for a SWPPP. The 2017 SWPPP was updated in 2022.								X	Continuous: Permit Director or representative to maintain stormwater certified operator status; implement inspections; and continue BMPs.	See COK MS4 NPDES Permit Application Section 9 for inspection/maintenance programs. Acquired Stormwater Certified Operator License(s); number of inspections; number of BMPs implemented; overall SWPPP compliance.
19	Continue Recyclable Material Collection Program.	There are three components to the City's residential recycling program: weekly curbside residential collection for all residential properties with four units or less; multi-unit collection for those property owners or managers willing to participate; and a recycling drop-off facility is available to all citizens.								X	Annual evaluation to continue program. Bi-Annual publication of "A View From the Curb The City's Guide to Waste & Recycling."	Volume of materials collected and number of participants; continued Bi-Annual publication of "A View From the Curb The City's Guide to Waste & Recycling."

Stormwater Management Plan - Revised 3-17-2023

Column >	1	2	3	4	5	6	7	8	9	10	11
Row	BMP/Action	Description/Method of Implementation	Minimum Measures							Frequency/Schedule	Method of Evaluating Effectiveness
			PPP	PEP	IDEP	CSC	PCC	P2UH	TMDL		
20	Continue Household Hazardous Waste Collection.	City residents are able to dispose of their hazardous waste at the Kalamazoo County Household Hazardous Waste Center, 1301 Lambert Avenue, free of charge. Each year the City enters into a contract with Kalamazoo County, which shares proportionately the cost with all participants to operate the program.						X		Re-evaluate and propose renewal of contract on an annual basis. Bi-Annual publication of "A View From the Curb: The City's Guide to Waste & Recycling"	Continued contracts with Kalamazoo County; volume and type of materials collected and number of participants; continued Bi-Annual publication and CDK website ads of "A View From the Curb: The City's Guide to Waste & Recycling"
21	Environmental Safer Products.	The City Commission Policy for "Procurement of Recycled & Environmentally Friendly Products" is provided as Attachment 1.						X		Continue current policy	Continuation and/or enhancement of existing policy.
22	Waterway Vegetative Buffers.	Continue use of the City's "Lawn Care Guidelines for Parks, Greenpaces, and Along Waterways" and discussion with staff and seasonal employees during annual "training day."						X		Continue current policy	Continuation and/or enhancement of existing policy; number of existing vegetative buffers maintained and how many installed along waterways; incorporation of specifications into contracts.
23	Lawn Care Guidelines. KVCC BMPs	Continue use of the City's "Lawn Care Guidelines for Parks, Greenpaces, and Along Waterways" and discussion with staff and seasonal employees during annual "training day."						X		Continue current policy	Continuation and/or enhancement of existing policy; Effective communication with lawn maintenance employees and temporary seasonal hires regarding policy; Incorporation of specifications into contracts.
24	Reduction of Pesticides, Herbicides, and Fertilizers. KVCC BMPs	The City has a "Pesticide/Herbicide Advisory Committee" to monitor the use of pesticides and herbicides in the City and recommend policies and guidelines. Also, various use of the City's "Lawn Care Guidelines for Parks, Greenpaces, and Along Waterways" and discussion with staff and seasonal employees during annual "training day."						X	X	Continue current policy; Review and consider updates/revisions.	See COE MS4 NPDES Permit Application, Section 3 for pesticide information and TMDL implementation Plan. Continuation and/or enhancement of existing policies.

PPP - Public Pa PPP - Public Participation/Involvement Program
 PEP - Public Ed PEP - Public Education Program
 CSC - Construction CSC - Construction Stormwater Runoff Control Program
 IDEP - Infiltration IDEP - Infiltration Discharge Elimination Program
 PCC - Post-Construction PCC - Post-Construction Control Stormwater Runoff Program
 TMDL - Total A TMDL - Total Maximum Daily Load Implementation Plan

**MUNICIPAL OPERATIONS/GOOD HOUSE-KEEPING
 BMPs, POLLUTANTS, AND STORMWATER PROGRAM ASSESSMENT
 Presented as a Supplement to Table 2 (SWMP)**

BMP	Pollutant of Concern	Other Issues/Concerns	Annual Assessment:
Winter Road Maintenance - Snow and Ice Removal	Salt, Sediment	Street Safety	Best materials and least amounts being used to meet program objective
Salt Storage	Sodium, Chlorides	Storage Facility Maintenance	Regulatory Compliance
Street Sweeping and Clearing	Salt, Sediment, Hydrocarbons	Traffic Control	Adequate Street Coverage, Methods, and Disposal Practices
Catch Basins/Inlet and Storm Main Cleaning	Salt, Sediment, Hydrocarbons	Traffic Control	Adequate Program, Methods, and Disposal Practices
Soil Erosion/Sedimentation	Sediment, Phosphorus	Street Safety	Ordinance/Permit Compliance
Structural Controls	Sediment/Variou	Stormwater Storage and Treatment	Inspections/Response to Needs
Leaf Collection Program	Phosphorus/Organic Matter	Street Safety, Stormwater Impediment	Volume Collected and Adequacy of Methods and Schedule
Brush Pick-up Program	Phosphorus/Organic Matter	Street Safety, Stormwater Impediment	Volume Collected and Adequacy of Methods and Schedule
Bulk Trash Pick-up Program	Detritus/Trash	Street Safety, Stormwater Impediment	Volume Collected and Adequacy of Methods and Schedule
Recyclable Material Collection Program	Paper, Glass, Plastics		Volume Collected and Adequacy of Methods and Schedule
Household Hazardous Waste Collection Program	Household Chemicals	Chemical Exposures with Illicit Dumping	Currency of Contract; Volume Collected
Pesticides, Herbicides, and Fertilizer Applications	Pesticides, Herbicides, Phosphorus, Nitrogen	Chemical Exposures with Illicit Dumping	Practices to Minimize Use/Efficiency
Fleet Services	Oils, Greases, Hydraulic Fluids, Solvents, Gasoline	UST Management/Safety, Staff Exposures and Safety	See SWMP; Safety Management; Waste Disposal Practices

Section 5: Attachment B

SWMP Supplemental Implementation Plan (SIP)

April 2022



SECTION 5: ATTACHMENT B

SWMP Supplemental Implementation Plan - April 2022

In addition to the City of Kalamazoo's SWMP Table included in Section 5, this document represents a SWMP supplemental implementation plan (SIP) with a 1-year action list and a 2 to 3-year plan to address 2021 and 2022 new NPDES MS4 permit requirements (i.e., a 3-year catch basin cleanout program, TMDL E. Coli creek sampling plan, etc.). This SIP is provided to EGLE as a phased-in approach to increase the City's Level of Services (LOS) based on the City's realized funding and staffing resource limitations. It includes any infrastructure bill/grant opportunities that may become available during the 2022-2027 NPDES MS4 permit cycle, which will be essential to achieving an increased LOS on an expedited level.

Toward this end, the phased-in approach asset management program outlined in the SIP, has been in development since 2020 in preparation of the 2022 Permit MI0060009 V1.0 Reissuance, and the need to provide EGLE with a good-faith commitment toward meeting the new 2021-2022 permit requirements. It also is in line with the City's desire to improve the LOS to our stakeholders (i.e., the City of Kalamazoo local communities and neighborhoods, etc.) as outlined in the City's "Imagine Kalamazoo 2025", "Stormwater Resources Strategic Asset Management Plan" and "Capital Improvement Plan". As such, the objective for Asset Management is to "Develop and sustain public infrastructure that serves the needs of the community including roads, utilities, water supply and Wi-Fi". The key factor in achieving this objective is obtaining funding for the stormwater SWMP implementation; however, to do that requires this SIP phased-in approach be completed as a first step in order to take advantage of any future infrastructure bill/grant opportunities. Without this first step, the heavy-lifting of the City's SIP completion, the City will not be able or ready to seek future funding opportunities that are dependent on established asset inventories, asset condition assessments, a determination of the risks associated with asset failures, and the cost projections for improved level of services.

Therefore, the City is in the process of implementing the SIP which will "turn the ship's course" in the direction that EGLE's NPDES permit intends. Two complimentary tables are provided to this text, the SWMP SIP Implementation Schedule and the Stormwater Lucy Implementation (Phase I).

SIP Policy and Governance: The City is establishing policies and objectives related to asset management (AM), bringing those policies to life through a strategy and roadmap, and then measuring progress and monitoring implementation over time.

Objectives already initiated within the 1-year cycle include progress toward stormwater (SW) policy updates, SW asset inventories, an asset condition assessment/service-life analysis, and development of operation and maintenance (O&M) strategies. These efforts leverage technology such as the Lucy Asset Management Program and GIS software to begin developing Resourcing Strategies consistent with its SW Asset Management Plan. The City's has already collected baseline data in its current AM practices. One of the largest short-term actions that represents the current state is its implementation of Lucy, a Computerized Maintenance Management System. It is also currently using Lean efficiency practices to map and evaluate some program workflows.

The SIP will use Resourcing Strategies and Resource Management to better inform O&M Decision-Making and identify and implement best management practices (BMPs) related to its Capital Improvement Planning (CIP) Decision-Making process over the next fiscal budget cycle.

Stormwater operations are resource intensive, and therefore, shifting to a mode of managing resources consumed against a resourcing strategy will reduce highly reactive corrective actions.

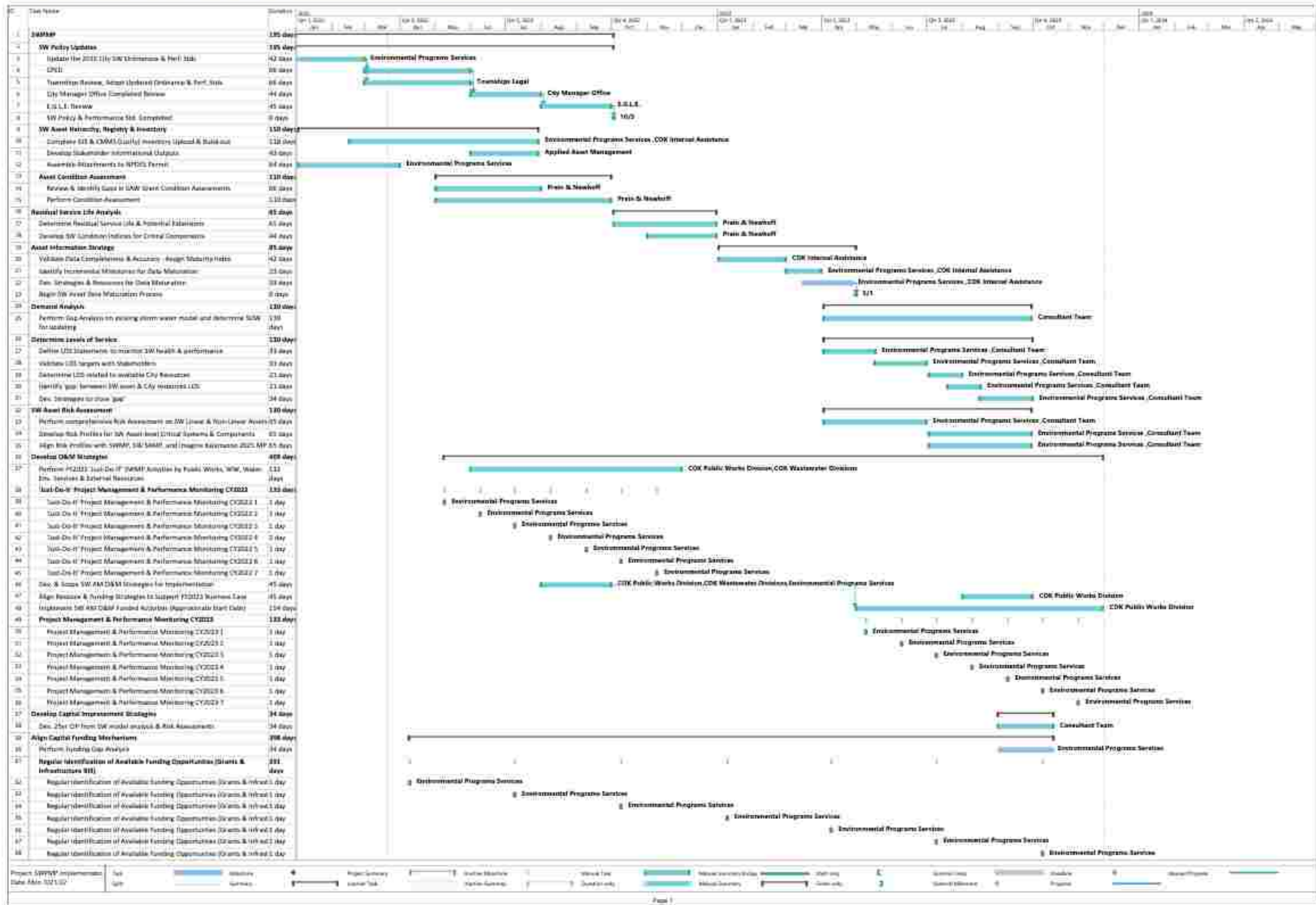
SIP Objectives to be continued and others initiated within the 2 to 3-year cycle shift toward integrating asset maturity indices, demand analysis, forecasting O&M strategies, project management and performance monitoring, and CIP demands/mechanisms of lifecycle delivery.

Maintenance Delivery is the management practice of preventive maintenance and correction action methodologies for a collective set of assets. Once established, the outcome will enable preventive maintenance forecasting and scheduling over an asset component's lifecycle in the form of Lucity work orders through a standardized workflow process. The City will develop internal and external dashboards for messaging the health and performance of the stormwater asset system by utilizing the strategies forecasted in Lucity to schedule work orders for assignments in advance of problems.

Efforts will remain proactive; build reliability, and create lifecycle value within primary and other relevant components within the system. The process will develop assurances that the intended design of any system component is achieving its maximum performance over its lifecycle, and maximizing value to the system and the City's stakeholders. The benefit of using this approach with proper storm sewer configuration management practices minimizes the risk of adding unnecessary O&M to an existing antiquated system. The aspect of Risk Assessment and Management will take effort, but it will add tremendous value by averting risk and building financial resiliency.

After the 3rd year, the City will commit to re-evaluation of the SIP primary objectives and development or refinement of all of the SIP tasks and the roadmap. Throughout the lifecycle of the SIP, the City will regularly identify potential funding opportunities (i.e., grants/infrastructure bills) or other legally available mechanisms to create a "stormwater utility" that can meet the requirements of the NPDES permit by becoming sustainable, reliable and offering a higher LOS and sustainable lifecycle delivery. Achieving an Asset Information System and Asset Information Standards will come in due time, greater than 5-years, as the SIP evolves and develops within Public Services Department. Asset Management Leadership will practice the theory of good management, continue to grow our Organizational Structure, Culture, and Competency to a sustainable level. This will be used to create the backbone of contingency planning and resiliency for the City's stormwater system and "steer the ship" in the City's desired direction.

City of Kalamazoo - SWMP SIP Implementation Schedule - April 2022



City of Kalamazoo - Stormwater Licity Implementation (Phase II)

Last Updated: 4/30/2022

Project Description: Create an up-to-date inventory, field work, field inspections, and reporting with the Licity Asset Management System

Schedule

Task	Task #	Status	Comments	Schedule		
				2021	2022 Q1	2022 Q2
Ensure that we have an accurate Stormwater Asset Inventory	1.0	Complete		█		
Update Licity to version 20.2	1.1	Complete	Needs to be done to take full advantage of ArcGIS Pro functionality	█		
Delete Existing Stormwater Assets from Licity DB	1.2	Complete	Currently no historical information is attached to the asset inventory that was imported in 2017	█		
Import New Stormwater Assets from new GIS DB	1.3	Complete	Import up to date Stormwater Inventory from new EB and load in Licity ASAM. 2/26/2021-Maintenance and structures are complete. Plans need to be completed.	█		
Verify information in Licity	1.4	Complete		█		
Update process for new or deleted assets	1.5	Complete		█		
Implement Work Order Process for Maintenance	2.0	In Progress	Completion scheduled for Q2 2022	█		
Create dashboards for Maintenance	2.1	Complete	Develop dashboards that include assets, Work Requests (WR), Work Orders (WO)	█		
Develop work request, work order, and asset forms and grids	2.2	Complete	Develop forms/grids, mandatory fields, assigned to proper work process	█		
Establish work flow process for maintenance	2.3	Complete	Workflow with Status (New, Assigned to WO, Pending, Closed in Field, Closed) with proper forms and fields. This is for Demand Maintenance Only	█		
Implementation and training for maintenance	2.4	In Progress	Develop training guide, introductory sessions, completed for inspector staff and maintenance supervisor. MFD need to develop training guide for maintenance crews.	█		
Roll out mobile devices for the field	2.5	Complete	Purchase, setup and deploy tablets	█		
Implement Inspections	3.0	In Progress		█		
Define all necessary inspections	3.1	Complete	Collect inspection forms from environmental staff	█		
Develop inspection forms	3.2	In Progress	Create forms for Licity. Completed for outlet inspections and water quality studies.	█		
Define all inspection schedules	3.3	In Progress	Collect information for inspection cycles.	█		
Dry weather evaluation (outlet)	3.3.1	Complete	Investigated the possibility of importing a schedule. Nothing was documented in a format that could be hand entered. Made sure there were fields in place for hand entry.	█		
PM schedule for sewerby	3.3.2	Complete	Determined PM schedules need to be defined by worksheet. Each structure has a work zone associated. Working with GIS team to associate the work zones to the map in order to create PM templates.	█		
Inspection for City BWS, various structures (stormwater treatment, retention, treatment basins)	3.3.3	Complete	Needs more clarification and definition	█	█	
Annual inspection/repairing for various BMP	3.3.4	In Progress	Needs more clarification and definition	█		
Implement DEP Inspections	3.4	In Progress	Scheduled for Q2 2022	█		
Develop DEP workflow process	3.4.1	In Progress	Scheduled for Q2 2022	█		
Develop DEP data entry forms	3.4.2	In Progress	Scheduled for Q2 2022	█		
Develop DEP reports	3.4.3	In Progress	Scheduled for Q2 2022	█		
Implement required inspection schedules	3.5	Complete	Build zones for Licity inspections, no work limits to report. This will be a manual process.	█		
Roll out mobile for environmental inspection staff	3.6	Complete	Purchase, setup and deploy tablets	█		
Reporting	4.0	In Progress		█		
Define necessary reports	4.1	In Progress	Define necessary reporting, identify any custom reports	█		
Develop any custom reports	4.2	In Progress	Create custom reports for Licity	█		
Custom report to show completed work orders/inspections by date and sorted by asset	4.2.1	In Progress	Building Licity custom work by asset report. Modifying to include requested fields.	█		
Further definition of custom report needs		In Progress		█		
Further historical records	4.3	Complete	Identify historical paper and electronic records and assess ability to report to Licity	█		
Populate historical records	4.4	Complete	Report/enter identified historical records. City staff is hand entering new data to import	█		
GIS Implementation	5.0	In Progress		█		
Identify potential GIS layers	5.1	In Progress		█		
Connect storm structures	5.2	Complete	Established connection and ability to work from map	█		
Connect storm conduits	5.3	Complete	Completed connection and ability to work from map	█		
Connect BMP sites	5.4	Complete	Completed connection and ability to work from map	█		
Training/Pre-DEP	6.0	In Progress		█		
Develop training materials	6.1	In Progress	Finalizing completed except maintenance crews	█		
Train maintenance supervisor(s)	6.2	Complete		█		
Train maintenance crew	6.3	Complete		█		
Train inspection staff	6.4	Complete	Implementation agreed upon change from being in field conditions	█		
Changes/updates	6.5	Ongoing		█		
Post Go-Live/Implementation Tasks	7.0	Ongoing				
Schedule check-in meetings	7.1	Ongoing	Progressive, weekly, bi-weekly, monthly, quarterly. We are holding monthly large group meetings. Weekly work sessions with both environmental and maintenance groups			

Section 5: Attachment C

City of Kalamazoo Code of Ordinances, Chapter 29
Stormwater System

Chapter 29

STORMWATER SYSTEM

GENERAL REFERENCES

Wastewater discharge regulations and enforcement, Soil erosion and sediment control — See Ch. 30, procedures — See Ch. 28.

Water — See Ch. 30.

§ 29-1. Purpose; intent.

A. The objectives of this chapter are:

- (1) To provide environmental protection to the waters of the state consistent with the State and Federal Clean Water Acts;
- (2) To regulate discharges into the City of Kalamazoo's stormwater system;
- (3) To remove existing and prevent the introduction of pollutants into the City's stormwater system, and the degradation that said constituents may cause to the environment;
- (4) To require permits for connections to the system and to prohibit nonpermitted connections; and
- (5) To establish legal authority to inspect and monitor use of the City's stormwater system to ensure compliance with this chapter, and to establish sanctions for those who violate this chapter.

§ 29-2. Definitions.

For the purposes of this chapter, the following shall mean:

ACT — Act 230, of the Public Acts of 1972, as amended, commonly known as the "Stille-DeRossett-Hale Single State Construction Code Act," and includes all international or national codes, including such codes' rules or appendices, as more fully set forth in Section 4 of the Act. **[Added 8-18-2008 by Ord. No. 1846]**

BEST MANAGEMENT PRACTICES (BMPs) — Devices or practices consistent with the guidelines set forth in the most current MDEQ Guidebook of BMPs for Michigan Watersheds, or equivalent practices and design criteria that accomplish the purposes of this chapter, as approved by the Department, that prevent pollutants from entering into stormwater flows, that direct the flow of stormwater, or that treat polluted water before it enters the stormwater system.

DISCHARGE PERMIT — A permit issued by the Department of Public Services ("Department"), Engineering Division or other division as designated by the Director to a user for a discharge into the City's stormwater drainage system.

FLOOD HAZARD BOUNDARY MAP (FHBM) — An official map of a community,

issued by the FEMA, where the boundaries of the flood, mudslide (i.e., mudflow) related erosion areas having special hazards have been designated as Zone A, M and/or E. [Added 8-18-2008 by Ord. No. 1846]

FLOOD or FLOODING —

- A. A general and temporary condition of partial or complete inundation of normally dry land areas from:
- (1) The overflow of inland or tidal waters;
 - (2) The unusual and rapid accumulation or runoff of surface waters from any source;
 - (3) Mudflows; and
- B. The collapse or subsidence of land along the shore of a lake or other body of water as a result of erosion or undermining caused by waves or currents of water exceeding anticipated cyclical levels or suddenly caused by an unusually high water level in a natural body of water, accompanied by a severe storm, or by an unanticipated force of nature, such as flash flood or an abnormal tidal surge, or by some similarly unusual and unforeseeable event which results in flooding, as defined in Subsection A(1) of this definition. [Added 8-18-2008 by Ord. No. 1846]

FLOODPLAIN — Any land area susceptible to being inundated by water from any source (see definition of "flooding"). [Added 8-18-2008 by Ord. No. 1846]

FLOODPLAIN MANAGEMENT — The operation of an overall program of corrective and preventive measures for reducing flood damage, including but not limited to emergency preparedness plans, flood control works, and floodplain management regulations. [Added 8-18-2008 by Ord. No. 1846]

FLOODPLAIN MANAGEMENT REGULATIONS — In addition to this chapter, zoning ordinances, land division regulations, building codes, health regulations, and other applications of police power that provide standards for the purpose of flood damage prevention and reduction. [Added 8-18-2008 by Ord. No. 1846]

ILLICIT CONNECTION — Any method or means for conveying an illicit discharge into the stormwater drainage system of the City.

ILLICIT DISCHARGE — Any direct or indirect non-stormwater discharge (or seepage) to the stormwater system that is not composed entirely of stormwater or uncontaminated groundwater, except as exempted in this chapter. These are considered illicit because municipal separate storm sewer systems (MS4s) are not designed to accept, process or discharge such discharges.

MDEQ — Michigan Department of Environmental Quality.

MS4 — Municipal separate storm sewer system, as defined by federal and state laws.

NPDES — National Pollutant Discharge Elimination System, as addressed in 33 U.S.C. § 1342(b) and the Federal Clean Water Act, as amended.

NPDES STORMWATER DISCHARGE PERMIT — A permit issued by the U.S. Environmental Protection Agency (EPA) [or a state under authority delegated pursuant to 33 U.S.C. § 1342(b)] that authorizes the discharge of pollutants to waters of the United

States, whether the permit is applicable on an individual, group, or general area-wide basis. For the purposes of this chapter, the subject NPDES permit is issued to the City by the MDEQ.

PERSON — Any individual, association, organization, partnership, firm, corporation or other entity recognized by law.

POLLUTANT — Any substance which, alone or in combination with other substances, if discharged to waters of the state in sufficient quantities, causes or contributes to, or has the potential to cause or contribute to, a violation of a federal, state, or local water quality standard, a nuisance, or to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, industrial, agricultural, recreational, or other legitimate beneficial uses or to any organism, aquatic life, plant or animal. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; nonhazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; sediment; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

STORMWATER — Run off from natural precipitation, including snowmelt, as well as other surface runoff and drainage that flow via natural or man-made drainage ways.

STORMWATER DRAINAGE SYSTEM (STORMWATER SYSTEM) — Any mode of conveyance that allows or permits the flow of stormwater to waters of the state, excluding combined sewer systems and sanitary sewer systems (separate stormwater systems are not intended to carry sanitary wastewater). The conveyance may be open or enclosed, public or private, and may contain nonstormwater discharges. Specifically, the stormwater system includes all of the City's storm sewer infrastructures and natural drainage designs that are intended to collect, control, and provide a method of conveyance, discharge, and perhaps treatment of stormwater. This may include roads with drainage systems, municipal streets, catch basins, inlets, curbs, gutters, ditches, and man-made swales, channels, wetlands, storm drains, outfalls, and treatment structures.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP) — A document, which describes the best management practices (BMPs) and activities to be implemented by a person or business to identify known or potential sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to stormwater, stormwater drainage ways, and/or receiving waters to the maximum extent practicable.

STRUCTURE — Anything built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner. **[Added 8-18-2008 by Ord. No. 1846]**

WASTEWATER — Any water or other liquid, other than uncontaminated stormwater, discharged from a facility.

WATERS OF THE STATE — Great Lakes and their connecting waters, all inland lakes, rivers, streams, impoundments, open drains, and other surface bodies of water within the confines of the state. It does not include drainage ways and ponds used solely for wastewater conveyance, treatment, or control.

§ 29-3. Responsibility for administration. [Amended 8-18-2008 by Ord. No. 1846]

The City's Department of Public Services ("Department") shall administer, implement and enforce the provisions of this chapter. For purposes of floodplain management regulations, the Department will work in conjunction with the City's building officials in performing such responsibilities. In addition, any other powers granted or duties imposed upon the Department may be delegated in writing by the Department Director to third parties as the Director deems appropriate.

§ 29-4. Discharge prohibitions.**A. Prohibition of illicit discharges.**

- (1) A person shall not discharge, directly or indirectly, any pollutant into the City's stormwater system, except in quantities expressly authorized by an approved NPDES permit or by a plan for compliance, or that are consistent with the utilization of best management practices.
- (2) A person shall not improperly store, handle, or apply any pollutant in a manner that will cause its exposure to rainfall or runoff or otherwise cause it to discharge into the stormwater system, except in quantities explicitly authorized by an approved NPDES permit or by a plan for compliance, or that are consistent with the utilization of best management practices.
- (3) The following shall not be deemed to be an illegal discharge (unless identified by the Department as a source of pollutants or deemed to be an interference to the proper operation and maintenance of the stormwater drainage system):
 - (a) Water supply line flushing, landscape irrigation runoff, diverted stream flows, rising groundwaters, uncontaminated groundwater infiltration [as defined by 40 CFR 35.2005 (20)], pumped groundwater (except for groundwater cleanups not specifically authorized by NPDES permits), discharges from potable water sources, foundation drains, air conditioning condensate, irrigation water, springs, water from crawl space pumps, footing drains and basement sump pumps, lawn watering runoff, waters from noncommercial car washing, flows from riparian habitats and wetlands, and residual street wash waters, discharges or flows from emergency fire fighting activities;
 - (b) Residential swimming pool discharges so long as the pool waters have been effectively de-chlorinated (less than 0.5 parts per million chlorine) and so long as the discharge does not occur during times of heavy rains (nonresidential/commercial swimming pools are regulated under Chapter 34, Swimming Pools, of the Kalamazoo Code and Chapter 28, Wastewater Discharge Regulations and Enforcement Procedures);
 - (c) Discharges specified by the Department as being necessary to protect public health and safety;
 - (d) Dye testing using MDEQ or Department approved dyes, so long as preceded by a written notification to and approval from the Department; and

- (c) Any nonstormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency or MDEQ, provided that the discharger is in full compliance with all requirements of the permit or order, and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the stormwater system.
 - (4) No person shall place any material in or around any stormwater system component, including catch basins, inlets, manholes, culverts, pipes, or natural watercourse, if such material acts to significantly obstruct or clog the stormwater system or stormwater flow. This prohibition shall not apply to the temporary placement of material as acceptable and consistent with official City material collection programs and policies (such as leaf or brush pickups).
 - (5) A person may not discharge fluids into or towards the stormwater system if such discharge accumulates and freezes on a street or sidewalk, or is reasonably likely to do so.
- B. Prohibition of illicit connections.
- (1) No person shall construct, use, maintain, or allow to continue to exist a connection to the stormwater system unless first permitted to do so by the City's Department of Public Services, Engineering Division or other department designated division.
 - (2) This requirement includes, without limitation, connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
 - (3) A person is considered to be in violation of this chapter if the person connects a conduit conveying wastewater to the MS4, or allows such a connection to continue.

§ 29-5. Floodplain management. [Added 8-18-2008 by Ord. No. 1846¹]

- A. Pursuant to the provisions of Section 8b of the Act, the City is hereby designated as the enforcing agency to discharge its responsibility under the Act and assumes responsibility for the administration and enforcement of the Act, including Appendix G of the Michigan Building Code, as amended, throughout its corporate limits.
- B. The Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) entitled "Kalamazoo County, Michigan (Community No. 260315)," referred to as "Flood Insurance Study No. 26077CV000A" and dated February 17, 2010, and the Flood Insurance Rate Maps (FIRMs) generated by that study, are identified as follows: **[Amended 2-1-2010 by Ord. No. 1866]**

¹ Editor's Note: This ordinance also renumbered former §§ 29-5 through 29-17 as §§ 29-6 through 29-18, respectively.

Map No.	Date	Type
1. 26077C0169D	February 17, 2010	FIRM
2. 26077C0175D	February 17, 2010	FIRM
3. 26077C0179D	February 17, 2010	FIRM
4. 26077C0180D	February 17, 2010	FIRM
5. 26077C0185D	February 17, 2010	FIRM
6. 26077C0186D	February 17, 2010	FIRM
7. 26077C0187D	February 17, 2010	FIRM
8. 26077C0188D	February 17, 2010	FIRM
9. 26077C0189D	February 17, 2010	FIRM
10. 26077C0191D	February 17, 2010	FIRM
11. 26077C0195D	February 17, 2010	FIRM
12. 26077C0285D	February 17, 2010	FIRM
13. 26077C0301D	February 17, 2010	FIRM
14. 26077C0302D	February 17, 2010	FIRM
15. 26077C0310D	February 17, 2010	FIRM

and are adopted by reference (including any subsequent amendments or replacements) and declared to be a part of Section 1612.3 of the Michigan Building Code.

- C. In performing the responsibilities under § 29-3, the Department and building officials shall administer, apply, and enforce the floodplain management regulations as contained in the State Construction Code (including Appendix G) and to be consistent with those regulations by:
- (1) Obtaining, reviewing and reasonably utilizing flood elevation data available from federal, state, or other sources pending receipt of data from FEMA to identify the flood hazard area and areas with potential flooding.
 - (2) Ensuring that all permits necessary for development in floodplain areas have been issued, including a floodplain permit, approval, or letter of no authority from the Michigan Department of Environmental Quality under the floodplain regulatory provisions of Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.
 - (3) Reviewing all permit applications to determine whether the proposed building sites will be reasonably safe from flooding. Where it is determined that a proposed building will be located in a flood hazard area or special flood hazard area, the Construction Code Act enforcing agent shall implement the following applicable codes according to their terms:
 - (a) Floodplain management regulation provisions, and referenced codes and standards, of the Michigan Residential Code, as amended.
 - (b) Floodplain management regulation provisions, and referenced codes and

standards, of the Michigan Building Code, as amended.

(c) Appendix G of the Michigan Building Code, as amended.

- (4) Reviewing all proposed subdivisions or land divisions to determine whether such proposals are reasonably safe from flooding and to ensure compliance with all applicable floodplain management regulations.
 - (5) Assisting in the delineation of flood hazard areas; providing information concerning uses and occupancy of the floodplain or flood-related erosion areas, maintaining floodproofing and lowest floor construction records, cooperating with other officials, agencies, and persons for floodplain management.
 - (6) Advising FEMA of any changes in City boundaries, including appropriate maps.
 - (7) Maintaining records of new structures and substantially improved structures concerning any certificates of floodproofing, lowest floor elevation, basements, floodproofing, and elevations to which structures have been floodproofed.
- D. In conjunction with this section, the City has adopted a "Resolution to Manage Floodplain Development for the National Flood Insurance Program (NFIP)," and may from time to time adopt other resolutions in order for the city to continue to participant in the NFIP.

§ 29-6. Compliance with other permits.

Any person subject to a NPDES stormwater discharge permit, City of Kalamazoo soil erosion and sedimentation control permit, or City of Kalamazoo site plan review shall comply with all provisions of such permit or approvals. Proof of compliance with said permits or approvals may be required in a form acceptable to the Department prior to the allowing of discharges to the MS4.

§ 29-7. Monitoring of discharges.

A. Access to facilities.

- (1) As a condition to having a connection to the City's stormwater system, an industrial or commercial facility shall permit the Department to enter and inspect at reasonable times and in a reasonable manner to determine compliance with this chapter. Such entry and inspection may include but not be limited to sampling, analysis, dye testing, smoke testing, remote video inspection (Tving), and examination and/or copying of records that are required by this chapter to be maintained.
- (2) The Department may require a commercial or industrial facility that discharges into the City's stormwater system to install devices as are reasonably necessary to monitor and/or sample the facility's stormwater discharge. In the alternative, and at the City's option, the City may install such devices. All such devices shall be calibrated to ensure accuracy.

- (3) The City is hereby empowered to seek assistance from any court of competent jurisdiction in obtaining entry to a facility if the Department has been refused access to any part of the premises from which stormwater originates and/or is discharged, and if the Department is able to demonstrate probable cause to believe that there may be a violation of this chapter, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this chapter or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community. In addition, or in the alternative, the Department, if denied entry, may terminate the facility's connection to the stormwater system. Such termination must be preceded by written notice to the facility of such intent.

§ 29-8. Requirement to prevent, control, and reduce stormwater pollutants by the use of best management practices.

- A. If the owner or operator of a facility does not provide reasonable protection from illicit discharge, the Department may require best management practices (BMPs) and/or stormwater pollution prevention plans (SWPPPs) for a facility that discharges, or is reasonably suspected of discharging, pollution into the stormwater system, at the facility's expense. A BMP shall be consistent with the guidelines set forth in the most current MDEQ Guidebook of BMPs for Michigan Watersheds, or equivalent practices and design criteria that accomplish the purposes of this chapter, as approved by the Department. A BMP and/or a SWPPP, which may be imposed even if the facility is subject to a NPDES permit, shall be communicated in writing by the Department to the facility.
- B. If the facility believes all or a portion of the BMP or SWPPP is unreasonable, it may appeal it to the Department Director. Such an appeal must be in writing and must be received by the Department Director within 14 days of when the BMP and/or SWPPP notification is received by the facility. In the absence of such an appeal, the facility shall implement the BMP and/or SWPPP before the deadline stipulated by the Department in the original written notification regarding the BMP requirement. If an appeal is denied, the facility shall implement the BMP and/or SWPPP within a deadline stipulated by the Department in the appeal denial notification letter. The required BMP implementation time period will be based on the severity of the specific situation and may range from one day to 45 days.

§ 29-9. Notification of spills.

- A. Notwithstanding other requirements of law, as soon as any person responsible for a facility, or responsible for emergency response for a facility, has information of a release, or suspected release, of pollutants into the stormwater system, said person shall take all reasonable and necessary steps to discover, contain, and clean up such release, including, if necessary, contacting emergency response agencies. Said person shall also notify the Department of the discharge either in person, by telephone, or by facsimile as soon as possible, but in no event more than six hours after learning of the release.
- B. All spill notifications provided to the Department in person or by telephone shall be documented by said person in writing and mailed to the Department within five

business days of said incident. Such written notice shall specify the following: the composition of the discharge and the cause thereof; the exact date, time, and estimated volume of the discharge; all measures taken to clean up the discharge, and all measures proposed to be taken to reduce and prevent any recurrence; the name and telephone number of the person making the report, and the name of the person who may be contacted for additional information on the matter. The person shall also provide the Department with copies of all documents the person submits to state or federal agencies relating to the same release.

§ 29-10. Records, reports, sampling and analysis.

A facility shall prepare and maintain records and/or conduct such testing and analysis as deemed necessary by the Department to insure compliance with a BMP or a SWPPP. The facility shall make such records and test results available to the Department upon request. The owner or operator shall retain a copy of the written notice, 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 stormwater runoff from any property for at least five years.

§ 29-11. Enforcement.

- A. Whenever the Department finds that a person has violated a provision of this chapter, the Department may order compliance by issuing a written notice of violation to the responsible person. Such notice may require one or more of the following:
- (1) The performance of monitoring, analyses, and reporting;
 - (2) The elimination of an illicit connection or discharge;
 - (3) That violating discharges, practices, or operations cease and desist;
 - (4) The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
 - (5) The abatement and correction of any degradation of riparian habitat and aquatic life caused by the failure to design, install, operate, or maintain sediment control, stormwater management, or agricultural BMPs in accordance with an approved sediment control plan, stormwater plan, sediment control permit, Soil Conservation and Quality Plan, or plan for compliance;
 - (6) The reimbursement to the City in an amount sufficient to reimburse the City for all reasonable administrative and remediation costs; and
 - (7) The implementation of source control or treatment BMPs.
- B. If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work may be done by the

Department, with the expense thereof charged to the violator.

§ 29-12. Appeal of notice of violation.

- A. Any person receiving a notice of violation may appeal the determination to the Department Director. The notice of appeal must be received by the Director within 30 days from the date of the notice of violation and identify the matter being appealed and the basis for the appeal. The Director shall address the appeal within 30 days from the date of receipt of the notice of appeal. The Director will consider the appeal and make a decision whereby it affirms, rejects, or modifies the action being appealed. In considering any such appeal, the Director may consider the recommendations of its staff and the comments of other persons having knowledge of the matter.
- B. In considering all such appeals, the Director may grant a variance from the terms of this chapter 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:
 - (1) The application of the chapter provisions being appealed will present or cause unreasonable difficulties for a facility; and
 - (2) The granting of the relief requested will not substantially prevent the goals and purposes sought to be accomplished by this chapter from being accomplished, nor result in less effective management of stormwater runoff.

§ 29-13. Suspension of access to City stormwater system.

- A. The Department may, after providing written notice, suspend MS4 discharge access to a person in violation of this chapter. Written notice shall describe the nature of the violation and the action necessary to correct the violation. If the violation continues for 10 calendar days after the notice was sent, the Department may suspend MS4 discharge access.
- B. The Department may suspend MS4 discharge access to a person in violation of this chapter, without prior notice, when such suspension is necessary to stop an actual or threatened discharge that presents an imminent and substantial danger to the City's stormwater system or to the environment.

§ 29-14. Abatement activities by Department.

- A. The Department may perform reasonable and necessary abatement activities whenever the Department determines a violation of this chapter has occurred and it appears that the responsible party cannot or will not timely perform said activities, or when no known responsible party exists. The responsible party shall reimburse the City for all reasonable expenses thus incurred.
- B. If the City desires the responsible party to reimburse it for reasonable abatement activity expenses, the City shall, within 90 days of the completion of said activities, mail to that person a notice of claim outlining the expenses incurred, including reasonable administrative costs, and the amounts thereof. The person billed shall pay said sum in full within 30 days of receipt of the claim. If the person billed desires to object to all or some of the amount sought by the Department, said person

may file, within the same thirty-day period, a written objection so stating. The Department shall, within 30 days of its receipt of the objection, provide an opportunity for the objecting party to present facts or arguments supporting said objection. If the Department determines that some or all of the amount originally billed is appropriate, the person shall pay said sum within 30 days of receipt of that determination. If the amount due is not timely paid, the City may cause the charges to become a special assessment against the property and shall constitute a lien on the property.

§ 29-15. Injunctive relief.

If a person has violated or continues to violate the provisions of this chapter, the Department may petition the appropriate court for injunctive relief restraining the person from activities which would create further violations, or compelling the person to perform necessary abatement or remediation.

§ 29-16. Violations deemed a public nuisance.

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this chapter is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken by the City.

§ 29-17. Criminal prosecution.

Any person who violates this chapter shall be guilty of a misdemeanor, punishable by a fine of not more than \$500 or imprisonment of not more than 90 days. Each day a violation exists shall be deemed a separate violation.

§ 29-18. Remedies not exclusive.

The remedies listed in this chapter are not exclusive of any other remedies available under any applicable federal, state, or local law and it is within the discretion of the Department to seek cumulative remedies.

Section 5: Attachment D

City of Kalamazoo Code of Ordinances, Chapter 30

Soil Erosion and Sedimentation Control (SESC)

Chapter 30

SOIL EROSION AND SEDIMENTATION CONTROL

GENERAL REFERENCES

Buildings and building regulations — See Ch. 9,	procedures — See Ch. 28.
Construction Board of Appeals — See § 9-31 et seq.	Stormwater system — See Ch. 29.
Land division — See Ch. 20A.	Zoning — See App. A.
Wastewater discharge regulations and enforcement	Land subdivision standards — See App. B.

STATUTORY REFERENCES

Soil Erosion and Sedimentation Control — See MCLA § 324.9101 et seq.

§ 30-1. Purpose.

The purpose of this chapter is to control soil erosion and sedimentation with respect to earth change activities within the City, by requiring proper provision for water disposal and protection of soil surfaces during and after construction, in order to promote the safety, public health and general welfare of the City, as well as to limit the exposed area of any disturbed land for the shortest possible period of time.

§ 30-2. Definitions.

A. The following definitions shall apply in the interpretation and enforcement of this chapter:

ACT 451 — Part 91, Soil Erosion and Sedimentation Control (SESC), of the Natural Resources and Environmental Protection Act, being Act No. 451 of the Public Acts of 1994, as amended,¹ as well as the promulgated rules of the Michigan Department of Environmental Quality (MDEQ).

CERTIFICATION OF COMPLETION — A signed written statement by the Building Official or the Building Official's designee that specific construction has been inspected and found to comply with all requirements specified in this chapter and any permit issued in accordance with this chapter.

CITY BUILDING OFFICIAL — The City Building Official of the City of Kalamazoo or his/her duly authorized representative, who has completed the required MDEQ SESC training.

EARTH CHANGE — A human-made change in the natural cover or topography of land, including cut and fill activities, which may result in or contribute to soil erosion or sedimentation of the waters of the state. "Earth change" does not include

1. Editor's Note: See MCLA § 324.9101 et seq.

the practice of plowing and tilling soil for the purpose of crop production.

EROSION — The process by which land is worn away by action of wind, water, gravity or a combination thereof.

EXCAVATION or CUT — Any act by which soil or rock is cut into, dug, quarried, uncovered, removed, displaced or relocated and shall include the conditions that result from such activities.

FLOODPLAIN — That area which would be inundated by storm runoff or floodwater equivalent to that which would occur with a storm event of one-hundred-year recurrence frequency after total development of the watershed.

GRADING — Any stripping, excavating, filling, stockpiling or any combination of such activities, and shall include the land in its excavated or filled condition.

MUNICIPAL ENFORCING AGENCY (MEA) — The Department of Community Planning and Development, or such subsequent department or division as the City Manager designates in writing as having enforcement responsibilities under this chapter.

PERMIT — A permit issued to authorize work to be performed under this chapter in accordance with Act 451, including rules promulgated under Act 451.

STRIPPING — Any activity that removes or significantly disturbs the vegetative surface cover including clearing and grubbing operations.

- B. Words, terms and phrases used in this chapter, unless defined in this section, shall have the meaning ascribed to them in Act 451, including rules promulgated under Part 91.

§ 30-3. Compliance.

Except with respect to an earth change for which no permit is required, a certificate of occupancy for any building shall not be issued unless the applicant first obtains a certificate of completion from the MEA.

§ 30-4. Permits and plans.

- A. A land owner or designated agent who contracts for, allows, or engages in an earth change in the City shall obtain a permit from the MEA prior to commencement of an earth change which disturbs one or more acres of land, is on a parcel or parcels adjacent to a public street, or is within 500 feet of waters of the state as defined by Act 451. A permit is not required for those activities that are exempt from permits as specified in Section 9115 of Act 451² and Michigan Administrative Rule 323.1705, as amended. Failure to obtain a permit before initiating an earth change shall be deemed a violation of this chapter.
- B. A soil erosion and sedimentation control plan shall be prepared for any earth change identified in § 30-4A. The plan shall be designed to effectively reduce accelerated soil erosion and sedimentation and shall identify factors that may contribute to soil erosion or sedimentation, or both. The plan shall include, but not be limited to, the

2. Editor's Note: See MCLA § 324.9115.

following:

- (1) A soils survey or a written description of the exposed land area contemplated for the earth change, including predominant land features and soil types.
- (2) Details for proposed earth changes, including:
 - (a) A description and the location of the physical limits of each proposed earth change.
 - (b) A description and the location of all existing and proposed on-site drainage and dewatering facilities.
 - (c) The timing and sequence of each proposed earth change.
 - (d) A description and the location of all proposed permanent or temporary soil erosion and sediment control measures.
 - (e) A program proposal for the continued maintenance of all permanent soil erosion and sediment control facilities that remain after project completion, including the designation of the person responsible for the maintenance. Maintenance responsibilities shall become a part of any sales or exchange agreement for the land on which the permanent soil erosion control measures are located.
 - (f) A statement of quantity of excavation and fill involved.
- (3) A boundary line survey or legal description of the land on which the work is to be performed.
- (4) A plan of the site at a scale of not more than 100 feet to the inch showing:
 - (a) Name, address, and telephone number of the landowner or designated agent.
 - (b) Existing topography at a maximum of five-foot contour intervals.
 - (c) Proposed topography at a maximum of five-foot contour intervals.
 - (d) Location of any structure or natural feature on site.
 - (e) Location of any structure or natural feature on the land adjacent to the site within 50 feet of the site boundary line.
 - (f) Location of any proposed additional structures or development on the site.
 - (g) The proximity of any proposed earth change to lakes, drains, wetlands or streams.
- (5) Other information as requested, including but not limited to the location of stockpiles, access to site, tracking protection, location of storm inlets, and traffic routes.

§ 30-5. Application review and permit procedures.

All application review and permit procedures shall be in accordance with Act 451 and this chapter.

§ 30-6. Fees.

At the time of filing an application for a permit, a nonrefundable fee shall be charged for plan review. Upon approval of the plans a permit will be issued and a fee shall be made for the permit, including inspections. Fees will be in accordance with a fee schedule adopted by resolution of the City Commission from time to time.

§ 30-7. Bond requirement.

- A. A permit shall not be issued for an earth change unless the permittee first posts with the City a bond executed by the owner or the owner's contractor issued by a surety authorized to do business within the state; provided, however, that a bond shall not be required for single-family residential units less than one acre in size.
- B. The bond shall be in a form approved by the City Attorney, payable to the City and in an amount sufficient to assure the installation and completion of such protective and corrective measures as may be required by the MEA. The bond may include penalty provisions for failure to complete the work on schedule as specified in the permit.
- C. Every bond shall include language requiring the permittee to comply with all the provisions of this chapter and all terms and conditions of the permit and to complete all work contemplated under the permit within the time limit specified in the permit. If no time limit is specified the project shall be completed within 365 days after the date of the issuance of the permit.

§ 30-8. Extension of time.

Not less than 10 days prior to the expiration date of a permit, a permittee may present in writing to the MEA a request for an extension where the permittee asserts that it is unable to complete the work within the specified time. For good cause shown, the MEA may grant additional time for completion, but no extension shall be treated or interpreted as a release of the surety bond.

§ 30-9. Failure to complete work.

- A. In the event of failure to complete work required as part of an approved permit, the MEA may order such work as necessary to provide for effective soil erosion and sedimentation control. The permittee and the surety executing the bond shall continue to be firmly bound under a continuing obligation for the payment of all necessary costs and expenses that may be incurred by the City in causing any and all work to be done to comply.
- B. Notwithstanding other provisions of this chapter, the MEA may avail itself all the rights provided under Act 451 in the event a permittee fails to comply with an approved soil erosion and sediment control plan or other permit conditions.

§ 30-10. Denial of permit.

Permits shall not be issued where:

- A. The proposed work would cause uncontrolled soil erosion and sedimentation; or
- B. The proposed work would cause hazards to the public safety and welfare; or
- C. The proposed work will damage any public or private property, interfere with an existing drainage course so as to cause damage to adjacent property, result in the deposit of debris or sediment on any public way, waters of the state or create an unreasonable hazard to persons or property; or
- D. The land area in which work is to occur is subject to geological hazard such that no reasonable amount of corrective work can eliminate or sufficiently reduce settlement, slope instability or any other such hazard to persons or property; or
- E. The land area in which the work is to occur is within the floodplain of any stream or watercourse, unless a permit from the MDEQ approving the work accompanies the application and a hydrologic report prepared by a professional engineer is submitted certifying that the proposed work will have no detrimental influence on the public welfare or upon the total development of the watershed; or
- F. The proposed work unreasonably exposes the land to repeated disturbances.

§ 30-11. Modification of approved plans.

Any modification of an approved plan must be submitted to and approved by the MEA. All necessary supplemental reports shall be submitted with the proposal to modify the approved plan. No work in connection with any proposed modification shall be permitted without the prior approval of the MEA.

§ 30-12. Responsibility of permittee.

During operations associated with the approved soil erosion and sedimentation control plan, the permittee shall be responsible for:

- A. The prevention of damage to or sedimentation of waters of the state, adjacent properties or public areas. No person shall grade on land so close to a property line as to endanger any public street, sidewalk, alley or any public or private property without supporting and protecting such property from settling, cracking or other damage that might result. Similarly, no person shall permit sediment or runoff to occur on public streets, sidewalks, alleys or other public area.
- B. Carrying out the proposed work in accordance with the approved plans and in compliance with all the requirements of the permit, this chapter and Act 451.
- C. The prompt removal of any sediment that may inadvertently be deposited in any lake, drain, stream or wetland.
- D. The complete restoration of the site within five business days following final grading of the site.

§ 30-13. Maintenance requirements.

Persons carrying out soil erosion and sedimentation control measures under this chapter, and all subsequent owners of the property concerning which such measures have been taken, shall be liable to maintain all permanent anti-erosion and sediment control devices, retaining walls, structures, plantings, and other protective devices.

§ 30-14. Minimum design standards for erosion and sediment control.

All grading plans and specifications, including amendments to previously approved plans, shall include provisions for erosion and sediment control in accordance with, but not limited to, the standards contained in the current versions of Michigan Department of Transportation's Soil Erosion and Sedimentation Control Manual or the Michigan Department of Management and Budget's Soil Erosion and Sedimentation Control Guidebook. Current copies of these publications shall be available for public inspection in the office of the Building Official.

§ 30-15. Variances and exceptions.

Where it is alleged that there is an error or misinterpretation in any order, requirement, determination or interpretation made by the MEA on non-Part 91 issues, the applicant may file an appeal with the Construction Board of Appeals. Such an appeal must be filed within 21 days of the issuance of the decision at issue. The Construction Board of Appeals may, by a majority vote of its members serving, affirm, reverse, or affirm with conditions the appeal consistent with the general purposes and the intent of this chapter.

§ 30-16. Inspection and enforcement.

- A. Representatives of the MEA may enter at all reasonable times in or upon private or public property for the purpose of inspecting and investigating conditions or practices associated with the issuance of a permit. If the MEA finds that the permittee has not complied with Act 451 or this chapter and that the work does not conform to the permit issued, a cease and desist order shall be issued and the permit shall be revoked. The permittee shall be notified by mail of the MEA's determination. The permittee shall, within five calendar days following the issuance of the notice, implement and maintain soil erosion and sediment control measures consistent with the approved plans, Act 451, and this chapter. The permittee shall continue to be firmly bound under a continuing obligation for the payment of all necessary cost and expenses that may be incurred by the MEA in causing any and all work to be done to comply with the regulations.
- B. Upon satisfactory execution of all proposed earth change plans and other requirements, the permittee shall file a written notice of completion so that the MEA may make a final inspection and issue a certificate of completion and release of the bond. If the project is to be completed in different phases, the MEA may issue separate permits and certificates of completion and bond release for each phase of the earth change project.
- C. Notwithstanding any other provision of this chapter, the MEA shall have the right to avail itself to all enforcement mechanisms provided for by Act 451. All state rules and regulations promulgated under Part 91 of the Act are hereby incorporated

by reference into this chapter.

§ 30-17. Penalties.

- A. Any person, firm or corporation who violates any provision of this chapter is responsible for a municipal civil infraction and shall be fined not more than \$2,500 for each violation. A civil infraction citation for a violation of this chapter may be issued by the Building Official, or by such person as the City Commission or City Manager may designate.
- B. Each day a violation exists or continues shall be deemed as a separate offense.
- C. Any person, firm or corporation found responsible for a violation of this chapter within two years of a prior conviction for a violation of this chapter shall be fined an amount double the amount assessed for the immediately preceding violation or the maximum fine permitted by state law, whichever is less.
- D. In addition to the remedies provided in this chapter, the MEA may, following proper notification, enter the property for the purpose of correcting or abating the violation in accordance with Act 451 and Michigan law.
- E. In addition to fines assessed pursuant to this chapter, a person, firm, or corporation found to be responsible for a violation shall pay the MEA's actual costs, direct or indirect, for correcting and abating the violation, and the actual costs, direct and indirect, to which the MEA has incurred in correcting or abating the violation to the extent permitted by law. In the event that the MEA is not reimbursed for its costs within 30 days of the date it provides written notice to the property owner(s), the fines and costs may be added to and made part of the next City tax bill against the subject premises and may be collected in the same manner as provided by Michigan law for the collection of City taxes on real estate.

§ 30-18. Civil remedies.

In addition to any other remedies provided in this chapter, the City or the MEA may also proceed against any person, firm or corporation for a violation of this chapter by seeking injunctive relief and/or damages.

Section 5: Attachment E
Enforcement Tracking Table

Stormwater IDEP Enforcement Tracking Table

Name of Business:						
Address:						
Property Owner Name:						
Receiving Stream:						
Outfall:						
Date of Action:						
Type of Action:						
Comments:						
Staff Name:						
Initial Situation Assessment						
Indicate with "✓" →						
	Level 3. Higher level of determined or reasonable potential severity relative to impact on water quality - initial assessment within 48 hours.	Level 2. Medium level of determined or reasonable potential severity relative to impact on water quality - initial assessment within 30 days.	Level 1. Lower level of determined or reasonable potential severity relative to impact on water quality - initial assessment within 60 days.	Level 0. No level of reasonable potential severity relative to impact on water quality - no field assessment deemed necessary.		
Date:						
Comments:						
Ordinance Related Response						
Indicate with "✓" →						
	Step 1. Verbal Notice of Violation by Department of Public Services within 30 days of initial assessment determination for lower severity risk.	Step 2. First Written Notice of Violation by Public Services within 60 days if non-compliance of Verbal Notice or otherwise warranted from Assessment.	Step 3. Second Written Notice of Violation within 14 days of determination of non-compliance of directives in first Written Notice.	Step 4. City site abatement or other legal response after non-compliance of directives in second Written Notice or warranted from Assessment.		
Date:						
Comments:						

Section 6: Attachment A

Public Education Plan (PEP) – Revised 2022



Stormwater Public Education Program - Revised 2022

Item #	Public Education Topic	Key Messages	Target Audiences	Primary Messages or Messaging	Timeline	Evaluation/Measurement/Output	Responsible Staff
1	Public Responsibility and Stewardship of Watersheds	<p>Define watershed boundaries to specify watershed boundaries and identify the watershed stewardship team.</p>	<p>Residential, business, and public employees, and the community at large, including watershed stewardship teams.</p>	<p>A representation of watershed stewardship is required by the City of Dallas (City) to ensure that the watershed stewardship team is established and that the watershed stewardship team is responsible for the watershed.</p>	<p>Immediate</p>	<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>	<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>
				<p>Provide water stewardship information to watershed stewardship teams, including watershed stewardship team members and the public. Provide watershed stewardship information to watershed stewardship teams, including watershed stewardship team members and the public. Provide watershed stewardship information to watershed stewardship teams, including watershed stewardship team members and the public.</p>		<p>The watershed stewardship team is responsible for the watershed.</p>	
2	Reduce Stormwater Discharge Location and Volume Impacts	<p>Encourage to reduce stormwater discharge volume.</p>	<p>Residential, business, and public employees, and the community at large, including watershed stewardship teams.</p>	<p>Provide water stewardship information to watershed stewardship teams, including watershed stewardship team members and the public. Provide watershed stewardship information to watershed stewardship teams, including watershed stewardship team members and the public. Provide watershed stewardship information to watershed stewardship teams, including watershed stewardship team members and the public.</p>	<p>The watershed stewardship team is responsible for the watershed.</p>	<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>	<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>
				<p>Encourage to reduce stormwater discharge volume.</p>		<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>	
3	Public Reporting of BOD Discharges	<p>Encourage to report BOD discharges to the City of Dallas.</p>	<p>Residential, business, and public employees, and the community at large, including watershed stewardship teams.</p>	<p>Provide water stewardship information to watershed stewardship teams, including watershed stewardship team members and the public. Provide watershed stewardship information to watershed stewardship teams, including watershed stewardship team members and the public. Provide watershed stewardship information to watershed stewardship teams, including watershed stewardship team members and the public.</p>	<p>The watershed stewardship team is responsible for the watershed.</p>	<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>	<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>
				<p>Encourage to report BOD discharges to the City of Dallas.</p>		<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>	
4	Promote Properly Cleaning Mats and Procedures for Car, Passenger, and Power Washing	<p>Encourage to properly clean mats and procedures for car, passenger, and power washing.</p>	<p>Residential, business, and public employees, and the community at large, including watershed stewardship teams.</p>	<p>Provide water stewardship information to watershed stewardship teams, including watershed stewardship team members and the public. Provide watershed stewardship information to watershed stewardship teams, including watershed stewardship team members and the public. Provide watershed stewardship information to watershed stewardship teams, including watershed stewardship team members and the public.</p>	<p>The watershed stewardship team is responsible for the watershed.</p>	<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>	<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>
				<p>Encourage to properly clean mats and procedures for car, passenger, and power washing.</p>		<p>Watershed stewardship is a responsibility of all residents and businesses in the watershed.</p>	



Stormwater Public Education Program - Revised 2022

Priority	1	2	3	4	5	6	7	
Item	Public Education Topic	Key Messages	Target Audience	Delivery Mechanisms of Outreach/Education	Frequency	Evaluation / Success Criteria	Measurable Goal	
1	Inform and Educate the Public on Proper Application and Disposal of Pesticides, Herbicides, and Fertilizers	Apply pesticides and fertilizers properly according to the label directions. Do not over-apply. Do not apply to water bodies or near water bodies. Do not apply to lawns or gardens that are not yours.	Residents using lawn equipment, garden beds, and ornamentals.	Provide water treatment information to residents using lawn equipment, garden beds, and ornamentals. Provide information on proper application and disposal of pesticides, herbicides, and fertilizers. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals.	Provide water treatment information to residents using lawn equipment, garden beds, and ornamentals. Provide information on proper application and disposal of pesticides, herbicides, and fertilizers. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals.	Quarterly	Quarterly	Quarterly
2	Promote Proper Disposal Practices for Grass Clippings, Leaf Litter, and Other Waste that May Enter the MS4	Keep grass clippings, leaf litter, and other waste out of the stormwater system. Do not dump or burn. Do not use mulch. Do not use fertilizer. Do not use pesticides. Do not use herbicides. Do not use fungicides. Do not use insecticides. Do not use rodenticides. Do not use molluscicides. Do not use nematocides. Do not use molluscicides. Do not use nematocides. Do not use molluscicides. Do not use nematocides.	Residents using lawn equipment, garden beds, and ornamentals.	Provide water treatment information to residents using lawn equipment, garden beds, and ornamentals. Provide information on proper application and disposal of pesticides, herbicides, and fertilizers. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals.	Provide water treatment information to residents using lawn equipment, garden beds, and ornamentals. Provide information on proper application and disposal of pesticides, herbicides, and fertilizers. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals.	Quarterly	Quarterly	Quarterly
3	Identify and Promote the Available, Location, and Requirements of Facilities for Collection or Disposal of Household Hazardous Waste (Tires, Trailer Battery Waste, Antifreeze, and Motor Oils)	Household hazardous waste (HHW) includes a wide range of household products such as automotive fluids, paints, pesticides, and household chemicals. Do not mix. Do not burn. Do not dump. Do not pour. Do not throw away. Do not take to a dump. Do not take to a landfill. Do not take to a transfer station. Do not take to a recycling center. Do not take to a hazardous waste treatment, storage, and disposal unit (TSDF). Do not take to a municipal solid waste (MSW) landfill. Do not take to a municipal incinerator. Do not take to a municipal composting facility. Do not take to a municipal recycling center. Do not take to a municipal waste-to-energy plant. Do not take to a municipal water treatment plant. Do not take to a municipal wastewater treatment plant. Do not take to a municipal stormwater treatment plant. Do not take to a municipal stormwater management facility. Do not take to a municipal stormwater management facility. Do not take to a municipal stormwater management facility. Do not take to a municipal stormwater management facility.	Residents using lawn equipment, garden beds, and ornamentals.	Provide water treatment information to residents using lawn equipment, garden beds, and ornamentals. Provide information on proper application and disposal of pesticides, herbicides, and fertilizers. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals.	Provide water treatment information to residents using lawn equipment, garden beds, and ornamentals. Provide information on proper application and disposal of pesticides, herbicides, and fertilizers. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals.	Quarterly	Quarterly	Quarterly
4	Teach Tank Care and Maintenance	Inspect tanks regularly. Clean tanks regularly. Maintain tanks properly. Do not overfill. Do not underfill. Do not mix. Do not burn. Do not dump. Do not pour. Do not throw away. Do not take to a dump. Do not take to a landfill. Do not take to a transfer station. Do not take to a recycling center. Do not take to a hazardous waste treatment, storage, and disposal unit (TSDF). Do not take to a municipal solid waste (MSW) landfill. Do not take to a municipal incinerator. Do not take to a municipal composting facility. Do not take to a municipal recycling center. Do not take to a municipal waste-to-energy plant. Do not take to a municipal water treatment plant. Do not take to a municipal wastewater treatment plant. Do not take to a municipal stormwater treatment plant. Do not take to a municipal stormwater management facility. Do not take to a municipal stormwater management facility. Do not take to a municipal stormwater management facility. Do not take to a municipal stormwater management facility.	Residents using lawn equipment, garden beds, and ornamentals.	Provide water treatment information to residents using lawn equipment, garden beds, and ornamentals. Provide information on proper application and disposal of pesticides, herbicides, and fertilizers. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals.	Provide water treatment information to residents using lawn equipment, garden beds, and ornamentals. Provide information on proper application and disposal of pesticides, herbicides, and fertilizers. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals. Provide information on the proper use of lawn equipment, garden beds, and ornamentals.	Quarterly	Quarterly	Quarterly



Stormwater Public Education Program - Revised 2022

Goal	1	2	3	4	5	6	7
Goal	Public Education Topics	Key Messages	Target Audience	Delivery Mechanisms or Methodology	Timeline	Evaluation / Measures of Success	Successable Goal
1	Educate the Public on and Promote the Benefits of Green Infrastructure and Low Impact Development	<p>Recognize the benefits of green infrastructure for stormwater management and water quality. Recognize the benefits of green infrastructure for water quality, aesthetics, and recreation. Recognize the benefits of green infrastructure for water quality, aesthetics, and recreation.</p>	<p>Property owners, businesses, residents, and the general public. The program will be implemented in all areas of the city.</p>	<p>Provide water conservation information, including information on water conservation practices, water conservation products, and water conservation incentives. Provide information on green infrastructure and low impact development. Provide information on green infrastructure and low impact development. Provide information on green infrastructure and low impact development.</p>	<p>By the end of the program, the program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city.</p>	<p>By the end of the program, the program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city.</p>	<p>By the end of the program, the program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city.</p>
2	Identify and Educate Commercial, Industrial, and Institutional Facilities on Likely Contributors of Pollution to Stormwater Runoff	<p>Identify and educate commercial, industrial, and institutional facilities on likely contributors of pollution to stormwater runoff.</p>	<p>Commercial, industrial, and institutional facilities. The program will be implemented in all areas of the city.</p>	<p>Provide information on green infrastructure and low impact development. Provide information on green infrastructure and low impact development. Provide information on green infrastructure and low impact development.</p>	<p>By the end of the program, the program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city.</p>	<p>By the end of the program, the program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city.</p>	<p>By the end of the program, the program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city.</p>
3	Public Education Delivery Mechanisms	<p>Public education delivery mechanisms.</p>	<p>Property owners, businesses, residents, and the general public. The program will be implemented in all areas of the city.</p>	<p>Provide information on green infrastructure and low impact development. Provide information on green infrastructure and low impact development. Provide information on green infrastructure and low impact development.</p>	<p>By the end of the program, the program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city.</p>	<p>By the end of the program, the program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city.</p>	<p>By the end of the program, the program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city. The program will have been implemented in all areas of the city.</p>

SDP - San Diego Public Works
 SDCE - San Diego County Department of Environmental Health and Safety
 SDCS - San Diego County Department of Community Development
 SDCS - San Diego County Department of Community Development
 SDCS - San Diego County Department of Community Development
 SDCS - San Diego County Department of Community Development
 SDCS - San Diego County Department of Community Development

Section 7: Attachment A

Illicit Discharge Elimination Plan (IDEP)



**MUNICIPAL STORMWATER PHASE II MS4 PROGRAM
ILLCIT DISCHARGE ELIMINATION PLAN**

Associated With

**NPDES GENERAL PERMIT MIG610000
MS4 WATERSHED GENERAL PERMIT**

In Compliance with

**CERTIFICATE OF COVERAGE MIG60009
("KALAMAZOO MS4 - KALAMAZOO")
September 1, 2019**

Reviewed and Updated March 2022



ILLICIT DISCHARGE ELIMINATION PLAN

INTRODUCTION

Background

Description and Purpose

This Illicit Discharge Elimination Plan (IDEP) primarily serves to fulfill the subject general requirements of the City of Kalamazoo (City) Municipal Storm Water Permit (MIS040000) Compliance Obligations for the Certificate of Coverage (COC) MIG60009. The IDEP is intended to provide a reasonable, logical and methodical strategy to effectively research, field investigate, prioritize, and eliminate illicit discharges and connections to prevent or minimize degradation of surface waters by untreated discharges that contain pollutants such as heavy metals, toxics, oil and grease, solvents, nutrients, phosphorus, viruses, and bacteria. In addition, the plan includes a discussion of on-going strategies to minimize infiltration of seepage from sanitary sewers and septic systems into the City's separate storm sewer system (MS4).

Previous and Current Document Submittals and Correspondence

The original City IDEP was submitted to the Michigan Department of Environment, Great Lakes, and Energy (EGLE) as part of the first National Pollutant Discharge Elimination System (NPDES) Storm Water Permit Application in March 2003. Subsequently, it was revised and submitted to EGLE in June 2004, and again in December 2004 subsequent to the issuance of a new EGLE IDEP guidance document, in May 2005, and in May 2010.

The 2016 revised version of the IDEP reflected updates by the City as initiated by the issuance of the NPDES Stormwater Permit Application (associated Application due April 1, 2015), change from the Watershed-Based Permit to the Jurisdictional Permit MIS040000, acquired experience with its IDEP, newly available IDEP guidance documents, and a significant change in City staff involved in the implementation of the IDEP.

This document was reviewed and updated in March 2022 in preparation for the stormwater NPDES permit application due April 4, 2022. The changes reflect updates in

recording and workflow processes due to the implementation of Lucity Asset Management Software (Lucity) for stormwater asset management.

Definitions

For the purposes of this IDEP, the following definitions are provided.

"Department": The City of Kalamazoo Public Services Department.

"Discharge Point": An outfall from a drainage system to waters of the state, or a point where a stormwater drainage system discharges into a system operated by another municipal separate storm sewer system (MS4).

"Dry Weather Flow": Flow from storm drain outfalls following and during substantial dry periods (a minimum of 48 hours after a precipitation or snow/ice melting event).

"Illicit Connection": Any method or means (e.g. physical connection) for conveying an illicit discharge into the stormwater drainage system not authorized or permitted by the City of Kalamazoo.

"Illicit Discharge": Any direct or indirect non-stormwater discharge (or seepage) to the stormwater system that is not composed entirely of stormwater or uncontaminated groundwater, except as exempted by the City's Stormwater Ordinance (Ordinance No. 1776, Chapter 29 of the City of Kalamazoo Code of Ordinances), or for discharges specified in the permit and discussed herein.

"Significant Illicit Discharge": A discharge that shows evidence indicating the likely potential to impair water quality in the receiving water.

"Stormwater": That portion of precipitation that drains from City surfaces exposed to precipitation and flows via natural or manmade MS4 drainage systems into receiving waters.

"Stormwater System": All of the City's storm sewer infrastructures and natural drainage designs that are intended to collect, control, and provide a proper method of conveyance, discharge, and perhaps treatment of stormwater.

"GIS": Geographic Information Systems

"Lucity": Asset Management Software

"MS4": Municipal Separate Storm Sewer System (i.e., Stormwater Sewer System)

Legal Authority

General Authority

It is the City's understanding that the IDEP can be generally implemented under the auspices of the Federal Clean Water Act, PL 92-500, as amended; the State of Michigan Natural Resources and Environmental Protection Act 451, Public Act of 1994, as amended, Part 31; the BOCA National Plumbing Code/1993; and EGLE's NPDES Stormwater General Permit (MIS040000).

City of Kalamazoo Ordinances

On September 20, 2004, a new Chapter 29 of the Kalamazoo Code (Ordinance 1776) was formally adopted by the City Commission and became effective 10 days later. Officially, it is titled "An Ordinance to Create Chapter 29 Regarding the City's Stormwater System, to Repeal Certain Sections of Chapter 28, and to Amend Section 7 of Chapter 34." Chapter 29 was designed specifically to: regulate the contribution of pollutants; prohibit illicit discharges; establish/confirm legal authority to investigate, inspect, and eliminate illicit connections and discharges; and to require and enforce elimination of illicit connections and discharges. The Appendix contains a copy of the amended Chapter 29 (5-15-09). The new ordinance is referred to as the "Stormwater Ordinance" in this IDEP.

In addition, the Wellhead Protection Zoning Overlay (Ordinance 1825) and the Performance Standards for Groundwater Protection within Wellhead Protection Capture Zones and Stormwater Quality Management (Ordinance 1826) were formally adopted in May of 2007, and revised September 2015. These two ordinances work together to minimize known and potential impacts to groundwater and address stormwater discharge quality and serve as a primary tool for Site Plan Review to address groundwater and surface water quality issues. Copies of these Ordinances are also provided in the Appendix.

Furthermore, several sections within other current Kalamazoo Code generally address illicit stormwater discharges. Most noteworthy of the references are included in Chapter 28, "Wastewater Discharge Regulations and Enforcement Procedures," Article II "Discharge Regulations"; Chapter 28, "Wastewater Discharge Regulations and Enforcement Procedures," Article I; Chapter 33 "Streets and Other Public Grounds"; Chapter 34 "Swimming Pools"; Ordinance No. 1693 addressing Site Plan Review; Chapter 30 "Soil Erosion and Sedimentation Control"; and Chapter 9 "Buildings and Building Regulations."

Acceptable/ Authorized Non-Stormwater Discharges

The following non-stormwater discharges are not authorized by the City's NPDES COC but do not need to be prohibited by the permittee, unless they are identified as significant contributors of pollutants to the regulated separate stormwater drainage system:

- water line flushing and discharges from potable water sources;
- landscape irrigation runoff, lawn watering runoff, and irrigation waters;
- diverted stream flows, and flows from riparian habitats and wetlands;
- rising groundwaters and springs;
- uncontaminated groundwater infiltration (as defined by 40 CFR 35.2005 (20));
- pumped groundwater (except for groundwater cleanups not specifically authorized by NPDES permits), foundation drains, water from crawl space pumps, footing drains and basement sump pumps;
- air conditioning condensates;
- waters from non-commercial car washing;
- residual street wash waters;
- discharges or flows from emergency fire fighting activities;

- dechlorinated swimming pool waters from single, two, or three family residences – a swimming pool operated by the permittee shall not be discharged to a separate storm sewer or to the surface waters of the State without specific NPDES permit authorization from EGLE.

Discharges from residential swimming pools shall not be allowed to enter the stormwater system unless it meets the conditions set in the City's Stormwater Ordinance. These conditions address the issues of chlorine levels and storm sewer capacity.

Other proposals to temporarily discharge non-stormwater (e.g., dewatering) into the MS4 will be considered on a case-by-case basis but must have associated work plans approved by the Department, meet the "Performance Standards for Groundwater Quality within Wellhead Protection Capture Zones and Stormwater Quality" and if appropriate, demonstrate via water quality analyses that the discharge will meet water quality standards and will not be in violation of existing ordinances.

Stormwater System Description/Stormwater Asset Inventory

A Stormwater Asset Inventory was performed during the period 2001 through 2003. Specific stormwater system structures (assets), including catch basins, inlets, culverts, leaching basins, outfalls, and manholes were physically located and provided an identification number, locational description, condition assessment, and assigned coordinates using the global positioning system (GPS), and noted for material type and size. Additional attributes included offset from centerline and segment length for storm main, and location, directional orientation, and size of pipe connections entering/existing manholes, catch basins, and inlets. All of this information is maintained in the City's internal Geographic Information System (GIS) database. The locations of stormwater assets are available and can be viewed as an informational layer on the City's on-line GIS.

These stormwater assets can be viewed on the City's online GIS by selecting:

<https://www.kalamazocity.org/maps> "Find GIS/Property Mapping" and selecting "Stormwater Utilities" as one of the available layers.

In summary, the following lists the City's 2021 MS4 stormwater collection system inventory.

There are 12 discharge points from the City's MS4 to other permitted MS4s. Figure 1 shows all stormwater discharge points (outfalls and City MS4 to Non-City MS4 exit locations), indicating the receiving waters and MS4 interconnecting jurisdiction. Table 1 lists the outfall and action status, and Table 2 lists the City MS4 to non-City MS4 connections. Of the 12 City MS4 to non-City MS4 discharge points, 2 discharge into the City of Portage's (Portage) MS4, 4 discharge into the Road Commission of Kalamazoo County (RCKC) MS4, and 6 discharge into the Michigan Department of Transportation's (MDOT's) MS4.

There are approximately 567 outfalls shown on Figure 1, with the following breakdown:

- 396 City of Kalamazoo Outfalls with –137 discharging to the ground that are included in the inspections since most are near a surface water feature;
- 42 are attributed to adjoining NPDES permittees: 9 MDOT, 14 RCKC, 9 Portage, 1 KCDCO, 8 WWTP, and 1 WMU; and
- 126 are private outfalls.

The Inventory also includes:

- 11,560 catch basins/inlets,
- 4,902 manholes,
- 244 miles of storm sewer pipe, and
- 7 retention/detention basins.

Roles and Responsibilities

The City utilizes its own employees, equipment, and materials as much as possible and practical to investigate illicit connections and discharges.

Management

The Department's Water Resources Division management has administers and manages the IDEP. Jean Talanda, Environmental Programs Manager (or designee), serves as the City's primary MS4 IDEP contact for EGLE, including general administration, all written correspondence and verbal communication with EGLE, IDEP implementation and reporting, scheduling and facilitating internal meetings, and providing general prioritization and guidance of IDEP related work. If Jean Talanda is unavailable, Joe Bonhomme, Water Resources Division Manager is designated as the MS4 IDEP contact. The Department is also responsible for the implementation of the City's Stormwater Ordinance, including issuances of "Notice of Violations."

Environmental Compliance Specialist

The Environmental Compliance Specialist has the primary role of supervising the "Technician IIIs" staff involved with the specific day-to-day IDEP field activities, and providing oversight of the general scheduling of IDEP related work and communicating to the Water Resources Division any known pertinent IDEP issues, typically communicated from the Environmental Services Technician IIIs. The Environmental Compliance Specialist also on occasion, participates in investigations of illicit discharges as deemed necessary and/or appropriate by Department.

Environmental Services Technician IIIs

The Environmental Services Technician IIIs schedule and perform the day-to-day IDEP field activities, including outfall evaluations, discharge sampling, field sample analysis,

field source investigations, facility inspections/evaluations, document all associated work using provided IDEP forms in Lucity. This position also responds to reports of illicit discharges as assigned by Environmental Programs Manager or by the Environmental Compliance Specialist. They are also responsible to communicate any relevant IDEP issues or events, including apparent violations of the Stormwater Ordinance and/or opportunities for the implementation of appropriate facility best management practices, to the Department's Managers.

Analytical Laboratory Services

The City's State Certified Laboratories and/or its subcontractors (e.g., Trace Laboratories) perform all the necessary laboratory analysis.

Other

Staff from other Public Services' divisions periodically participate in implementing the IDEP, such as: Field Services staff provide stormwater asset maintenance and televising, "311" Customer Service staff receives and communicates initial illicit discharge reports during business hours or (269) 377-8148 after hours. Once a call is received by 311 staff indicating a suspected illicit discharge, a work request is created in Lucity and an email notification is sent to the Environmental Programs Manager. The Department's Engineering staff provides records, support and occasional expertise regarding stormwater system design and trouble reports. All City staff is responsible to appropriately communicate reports of illicit discharges.

Staff Training

Professional Experience

Environmental staff has numerous years experience with regulatory and non-regulatory environmental program administration and project management related to drinking water, water resource management, wastewater management, stormwater management, solid waste management, analytical laboratory management, contaminant source investigations, and other field and professional experience that qualify them in their roles and responsibilities.

Even prior to the submittal of the first Stormwater Phase II NPDES Permit Application, staff's direct roles and responsibilities with the Industrial Pre-Treatment Program (IPP) included significant and relevant experience involving unscheduled and demand facility monitoring and evaluations, spill response, contaminant source investigation, sampling techniques and associated protocol, and written documentation. Staff is knowledgeable with the application of the IPP Enforcement Response Plan that is similar in regulatory significance as the IDEP. They are also familiar with our Stormwater Ordinance. In addition, Staff can also draw upon experience from on-going training and experience with the City's Cross Connection Program, especially as it relates to procedures/methods for eliminating the illicit discharges/connections.

Specific IDEP Training

The Department has provided appropriate personnel with written copies of the IDEP, supplemental guideline documentation (including the recognition of naturally occurring phenomena and their sources), field instrumentation, various maps of the stormwater system, and hold occasional meetings to discuss the IDEP, and distribute new materials. In addition, the Environmental Programs Manager and Environmental Compliance Specialist have adequate IDEP training and experience includes addressing what illicit discharges/connections are, and techniques for sampling, analyzing, and recording. Staff will periodically attend formal refresher IDEP training as deemed appropriate by the Department.

During this effective Permit Period (October 1, 2022 through October 1, 2027), all employees who are involved in illicit discharge-related activities, or have field jobs with the potential for witnessing illicit discharges (e.g., street sweepers) and connections (inspectors) will receive training regarding the IDEP within the current five-year cycle for existing staff, and within one-year of the hiring of new staff. The DVD "Storm Watch: Municipal Storm Water Pollution Prevention Everyday Best Management Practices Employee Training" produced by Excal Visual was used during the permit cycle and it - or something comparable - will be used as the general training tool. The Technician III staff has already and will again view the Excal Visual DVD "Illicit Discharge Detection & Elimination A Grate Concern" which addresses IDEP more specifically. Other relevant information regarding the IDEP will be distributed/communicated to staff of the ESD, and the Divisions of Engineering, Field Services, Inspection Services, Operations and Maintenance, as necessary. In addition, a DVD "Stormwater Employee Training" was provided by EGLE and may be used for selected staff.

Training topics will include: definitions of illicit discharges and connections; techniques for finding and locating illicit discharges such as field screening and source identification; methods to eliminate illicit discharges/connections and appropriate enforcement response. In addition, Industrial Certified Stormwater Operator training necessary to meet the new permit obligations for "facilities" will be maintained and addressed in the Stormwater Pollution Prevention Plans (SWPPP_s) for the Public Services Stockbridge Facility.

General Safety Training

Safety training for general occupational safety is provided on a regular basis as part of the Department's Health and Safety Program. Specific safety training for issues such as confined space and traffic control have been provided in the past and will continue to be updated as deemed necessary by the Department.

WORK PLAN

For reference in the following sections, IDEP documentation forms are contained in the Appendix. Starting in 2020, the City of Kalamazoo began using Lucity Asset Management Software for dry weather evaluations and outfall sampling as a result of dry weather flow. IDEP tracking tools through Lucity are currently being developed and expected to be functional second quarter of 2022. Documentation for IDEP and reporting is expected to be fully implemented in Lucity starting April 2022.

Determination and Investigation of Illicit Discharges and Connections

Outfall Evaluations

Figure 1 shows the locations of all the known outfalls and the City MS4 to Non-City MS4 Exit Locations. The primary method to confirm the presence of illicit discharges is to perform a physical inspection of the outfalls, including both scheduled and those related to reports of dry weather discharges. Figure 2 illustrates an "Action Chart for Outfall Field Evaluation" that progresses the process up to facility evaluations/inspections.

During the first Stormwater Permit cycle, all the City's outfalls were evaluated. Table 1 also lists the current status of all of the stormwater outfall evaluations, indicating whether there are dry weather flows and if so, which have flow sources identified, which ones have on-going source investigations, and those that have associated corrective and/or enforcement actions. Subsequently, the priority for outfall dry-weather screening will consider known poor water quality, discharge complaints and reports, and high-risk land use areas.

It will be the goal to perform an evaluation of each outfall every 4 years. However, if results of the initial evaluations dictate a need for return visits and/or significant field and source investigations, fewer evaluations per year would result. Conversely, if less subsequent investigations are needed, outfall evaluations may occur with greater frequency. Currently, Environmental Services Technician IIIs are assigned to perform the outfall evaluations and are instructed to follow procedures indicated in Figure 2, perform the necessary facility evaluations/inspections, and prepare and submit documentation so that any necessary legal enforcement action can be initiated by the Department.

Dry weather outfall screening will be completed after a minimum of 48 hours after any precipitation or significant melting event. However, it is our experience that due to the highly variable precipitation events and characteristics of the stormwater collection system (travel time in specific outfall contribution areas, etc.), it is more effective to schedule specific outfall evaluations for specific circumstances, based on staff discretion and field observations. Outfalls to surface water have the highest priority for the purposes of the IDEP but outfalls to ground will be considered primarily for groundwater protection purposes and the potential of any discharges to reach and impact surface water.

For every outfall evaluation, staff will complete an "Outfall Evaluation Field Observation Form" in Lucity to record information such as weather conditions, discharge characteristics (presence and rate of dry weather flow), olfactory and visual observations of discharge characteristics (odor, color, turbidity, and floatable matter). Physical characteristics along the land/water interface will also be noted, including deposits/stains, vegetative type and stress adjacent to the outfall, and structure condition.

If a dry weather flow does exist and the source is obvious, no sampling or analysis will be performed, and the illicit discharge will be eliminated. If a dry weather flow exists and the source is not obvious, an "Outfall Evaluation Water Quality Analysis" will be completed in Lucity to record field analysis results for parameters such as temperature,

pH, specific conductivity or total dissolved solids, total chlorine, and fluoride using appropriate field instruments and sampling/indicator kits. In addition, each dry weather flow will also be sampled for laboratory analysis of fluoride to confirm field screening, phosphorus for the Total Maximum Daily Load (TMDL), and surfactants for indicating potential sources. If the origin of the discharge is suspected to be of human sewage, a sample will be collected for E-Coli and appropriately reported as discussed in the subsequent section "*Discharges of Untreated or Partially Treated Sewage of Human Origin.*" As Figure 2 indicates, the presence or absence of a dry weather flow will dictate subsequent actions, as follows:

No Dry Weather Flow

If a dry weather flow does not exist and there is no evidence of an intermittent flow, that outfall will be re-visited a minimum of every four years thereafter.

Wet Weather Flow: Evidence of Significant Pollutants

On occasion, field observations or public reports indicate that certain wet-weather stormwater discharges contain pollutant loadings that could be considered and categorized as Significant Illicit Discharges. These reports will be considered and prioritized on a case-by-case basis, depending on the specific evidence. If warranted, field and source investigations will be conducted similarly as with other illicit discharges as discussed below.

No Dry Weather Flow: Intermittent Flow Evidence

If dry weather flows were not observed at the outfall but evidence of an intermittent flow is apparent (i.e., deposits, stains, unusual vegetative type and stress, and odor) adjacent to the outfall exist, an intermittent flow investigation will be initiated. Up to three subsequent visits will be made within one year at least one week apart during a dry period to document and sample a discharge. If there is a subsequent observed flow, the investigative sequence of events and methodology will be the same as the other dry weather flows.

Dry Weather Flow: Non-Significant Discharges

If a dry weather flow exists and initial field visual indications, olfactory observations, and field analysis indicate the lack of evidence of a Significant Illicit Discharge, the fluoride level will dictate whether the source focus will be on natural groundwater sources or a public water supply source (since groundwater serves 100 percent of the source of the City of Kalamazoo Public Water Supply System and fluoride is an additive). The common range of Fluoride in the City's Public Water Supply System is 0.5 to 1.0 mg/L (ppm).

If the Fluoride level is greater than 0.5 mg/L, the investigation will focus on businesses that receive municipal water, and other likely sources from the City's public water supply system, including routine flushing of the water mains, landscape irrigation runoff, de-chlorinated swimming pool discharges, emergency fire fighting, or a broken water main, etc. If the Fluoride level is less than or equal to 0.5 mg/L, the investigation of the discharge source will focus on likely natural untreated groundwater sources, such as in-flow/infiltration of the stormwater infrastructure, pumped groundwater/dewatering

activities, etc. The IDEP tracking method will be completed in Lucity and a reasonable attempt will be made to identify the source.

Dry Weather Flow: Significant Illicit Discharges

If a dry weather flow exists and it exhibits evidence of a Significant Illicit Discharge, such as unnatural and/or characteristics of certain odor, color, sheen, staining, floatables and other deposits, vegetative stress or excessive growth, as indicated by the field analysis of the discharge, or the discharge was determined not be from natural untreated groundwater or the public water supply system, the source focus will be on industrial and commercial sources. However, residential sources will also be considered as potential sources. A IDEP tracking method will be used to record specifics of upstream manhole reconnaissance, beginning at the nearest upstream manhole and continue upstream to determine the section of storm main (pipe) that the illicit discharge originates. In addition, the names and addresses of facilities/residences along the storm main segment between the "wet" and "dry" manholes will be recorded on the *Source Investigation Form*. Other details of observations may also be recorded, such as on a "General Comment Form." Starting in 2022, source investigations will be tracking using Lucity software. If the discharge is suspected to contain human sewage, it will be investigated and reported as described in the noted subsequent section. Otherwise, the discharge will be addressed and reported as discussed in other sections of this IDEP.

Based on the results of the investigation, staff may prepare a "Recommended Facility Inspection Spreadsheet," noting the following considerations/relevance: Industrial Pre-Treatment Program category, Cross-Connection Program, ownership, NPDES Permit, EGLE Stormwater Permit, current observations, historical issues, business type, and selection rationale. The Environmental Programs Manager may re-prioritize the recommended rankings based on review of other available sources of information regarding the property. Additional information may include previous inspection reports associated with Occupancy Permits, Building Permits, Industrial Pre-treatment Program inspections, and Fire Marshal records. Property ownership will be determined by the City's GIS/City assessor parcel database. A map will be prepared indicating the subject facilities and stormwater collection system features. In addition, higher priorities will be given to facilities that can be inspected for multiple programs, thus optimizing the potential of information collection during site visits and minimizing disruptions of facility operations.

A "*Facility Survey for Stormwater IDEP Form*" (see Appendix) will be used to record facility inspection results. Facility evaluations will include a verbal interview with selected facility personnel, a visual facility evaluation, confirmation of discharge sources, and dye testing where warranted. An evaluation will target any evidence of illicit connections, illegal dumping, or poor housekeeping practices that could be a source of illicit discharges. If illicit connections are found and/or if other facility operational practices or known or suspected maintenance problems indicate a likelihood that an illicit discharge could occur, a post evaluation meeting will be held with the designated facility contact to discuss any necessary corrective actions. If appropriate, a Notice of Violation Letter from the Environmental Programs Manager will be sent to summarize the facility evaluation results and outline the need and schedule for corrective actions. If necessary, multiple Notice of Violation letters will be sent, with the second from the Water Resources Division Manager, and the third from the City Attorney's Office. The elimination of an illicit connection or required best management practice will be confirmed by a follow-up

facility/field evaluation, documented using the IDEP tracking method in Lucity and be documented in the next Stormwater Program Progress Report.

It is the goal of the Department to proactively work with the property and facility owners and managers to avoid the need for legal enforcement action. However if necessary, formal enforcement procedures detailed in the Stormwater Ordinance will be followed, such as: monitoring of discharges and the requirement to allow City staff to enter and inspect facilities as necessary; requiring the prevention, control, and reduction of stormwater pollutants by the use of best management practices; and appropriate record keeping.

Discharges of Untreated or Partially Treated Sewage of Human Origin

Sanitary Sewer Overflows

Currently, the City maintains a policy to complete the "Report of Discharges of Untreated or Partially Treated Sewage" form for any Sanitary Sewer Overflows (SSOs) and follows the associated procedures, including if appropriate, notification requirements, a Media Release, and E-Coli sampling. This procedure is initiated in association with the City of Kalamazoo's WWTP NPDES Permit MI0023299 and is summarized in a separate associated annual report. SSOs that impact surface water will also be summarized in the applicable Stormwater Progress Report.

Non-Sanitary Sewer Overflow Sewage Connections/Discharges

Non-SSO related illicit sanitary connections/discharges found during IDEP investigations would be addressed as follows. First, if an illicit connection is suspected as being from a sanitary or septic source but no evidence of a discharge exists, the associated source investigation and corrective response will be provided the highest priority for known illicit connections. Second, if evidence of a non-SSO significant discharge of untreated or partially treated sewage exists, it will be reported within 24 hours after the known discharge begins or is discovered and a Report of Discharges of Untreated or Partially Treated Sewage will be submitted, with the associated E-Coli sampling. The City will also notify the EGLE, the Kalamazoo County Human Services Department, and put out a media release, as required with Section 324.3112a of Part 31 of Public Act 451 of 1994. Any subject discharges will continue to be reported as appropriate until the illicit connection is eliminated. The report will indicate whether the frequency of discharge is periodic or continuous and will provide an estimate of the annual volume of discharge if possible.

Multiple MS4 Cooperative Investigations

If an upstream field source investigation reaches the boundary of another MS4 and indicates a possible cross-jurisdictional source and/or shared drainage infrastructures, the City will contact the appropriate representative of the subject MS4(s) in an effort to continue the source investigation in a collaborative and cooperative manner. The discharge will be prioritized like any other suspected illicit discharge (discussed herein). As previously noted, Table 2 lists the City to non-City MS4 connection locations. The City will continue to share information that it considers valuable to other MS4s regarding stormwater collection system infrastructure and flows.

Non-MS4 Private Drainage Systems

The City understands that it is not responsible under the Phase II Stormwater Regulations for stormwater drainage systems that are not owned and operated by the City or connected to the City's MS4. Non-MS4 stormwater issues that involve stormwater derived on private properties and directly flow to the waters of the state should fall under direct EGLE responsibility and appropriate regulations. However, as a courtesy to the EGLE, the City has in the past and will continue to provide information regarding private outfalls into the waters of the state when known. In addition, the City's Public Participation Process Plans and Public Education Plan address the education of the private property owners and operators with the intent/hope that they will use their private stormwater collection systems appropriately and incorporate any necessary best management practices.

Current Strategies/Actions for Minimizing Infiltration of Seepage from Sanitary Sewers and Septic Systems into the MS4

Reportedly, there are 14 street segments within the City that do not have sanitary sewer and two of those have storm sewers (see Table 3). Consequently, the likelihood for private septic systems to adversely impact the City's MS4 is negligible. However, the following describes the City's general work practices protocol that minimizes the possibility of infiltration of seepage from the sanitary sewer collection system into the stormwater collection system.

Strategies/Actions

1. Sanitary sewers are typically installed an average of three to five feet lower than storm sewers, thus providing a protective vertical separation if a seepage event occurs.
2. Sanitary sewers are routinely installed with at least 10 feet horizontal separation from the storm sewer (usually closer to the center of the roadway while the storm main is installed along or further beyond the road edge), thus providing protective horizontal separation.
3. New sanitary sewer is contract-specified to be air or water pressure tested, mandrel tested and televised subsequent to acceptance for operations and maintenance.
4. If a sanitary main breakage or joint leakage occurs and reaches the street via a manhole, all attempts are made to plug the storm sewer entry points, isolate and contain the sanitary material by earth dams from excavated soil or other means, and if appropriate, remove the waste using the City's vac-trucks. In addition, public notification procedures are properly followed.
5. For new or replacement sanitary main, it is required that SDR 35 PVC, ductile iron, or reinforced concrete be used. Note that due to the age of the sanitary sewer system within the City, the vast majority of sanitary main is clay with gasket/joint construction.
6. Televising of sanitary main is routinely performed ahead of planned street construction, and in response to known or suspected trouble areas.

7. Staff responds to internal reports regarding observations of changes in the physical integrity or flow characteristics within the sanitary system or reports from the public regarding apparent problems: Typical mitigation includes replacement of "broken" sewer pipes, spot repairs to minor "breaks" within the sewer pipe, and lining an existing sewer(s) to enhance its physical condition.
8. Sanitary sewer serves almost the entire City, with the small exception mentioned above. However, the City will work with the Kalamazoo County Human Services Department and other appropriate entities to: confirm those areas not currently being served by the City's sanitary sewer system; encourage septic system inspections; encourage septic system abandonment for failing septic systems or those within an area where it is reasonable to request connection to the sanitary sewer; and direct waste discharges to approved septic systems if sanitary sewer is not available.

Field and Facility Testing Procedures

Field investigative strategies were discussed previously and are generally self-explanatory on the IDEP forms located in Lucity (i.e., sample collection, screening, and analysis, upstream manhole reconnaissance, documentation of facilities in suspected source area, etc.). However, the following discusses additional testing procedures used in conjunction with facility evaluations or when traditional field visual evaluations are not adequate for source identification.

Dye Testing

Primarily, colored dye is used as the primary investigative test to investigate suspected illicit connections, and secondarily to indicate if flow exists in storm main. Use of colored dyes shall be performed in accordance with EGLE guidance, directives, and previously obtained approvals (see Appendix) contains information regarding dyes used by the City of Kalamazoo. The City will notify the EGLE Kalamazoo District Office, The Kalamazoo County Health Department, Local emergency dispatch, the City's 311 call center and Public Services Administration prior to dye use (considering reasonable significant quantities and conditions). If calls are made to any of the entities just listed including the EGLE Kalamazoo District Office or the Pollution Emergency Alerting System (PEAS) Hotline at (800) 292-4706 regarding visual observance of colored discharges, a possible explanation can be provided. In addition, any calls made to the City will be communicated via the City's IDEP "Public Information Reporting and Response Tracking System" discussed in a later section. All dye testing investigations will be performed in conjunction with procedures developed, used, and proven effective by the City for numerous years.

In summary, arrangements will be made for property and facility access as necessary. Typically, a crew of two or more will perform the dye inspections after a review is performed of the City's stormwater system adjacent to the subject site and a reasonable understanding of the facility-plumbing configuration is achieved. At the facility property, colored dye will be placed in selected plumbing fixtures at the suspected source location and downstream sanitary and stormwater manholes will be monitored for the presence of dye. If dye is observed in the sanitary manhole(s) but not in the stormwater system under adequate viewing conditions, it will initially be assumed that the source(s) of the illicit discharge is elsewhere, and the investigation will continue. If dye is observed in the

stormwater system, a source of the illicit discharge will be considered confirmed and appropriate notification and corrective procedures will be followed as previously discussed. If dry weather flows are no longer visible after confirmation of the illicit connection elimination, it will be assumed that the illicit connection has been corrected unless evidence to the contrary exists. If dry weather flows continue, other potential sources will be investigated.

Additional Investigative Strategies

If initial facility evaluations and associated dye techniques are not conclusive, additional dye testing may be implemented or other investigative methods will be initiated, such as additional discharge sampling and analysis, televising of storm pipe, or smoke testing.

Discharge sampling for additional parameters for laboratory analysis may be implemented to help indicate the type and origin of the flow. Laboratory analysis parameters will be selected on the basis of area land use and the presence/non-presence of sanitary or septic systems, including, phenols, ammonia/ammonium, E-coli, and toxicity screening tests.

Televising of the suspected segment of the storm main may be used to better determine the source of and illicit discharge. Televising the storm main will be used to visually observe and note illicit connections, pipe condition, and create a permanent record of conditions at a specific time. Conditions such as heavily stained pipe, grease build-up on pipe walls, food scraps, toilet and other paper products, soapsuds, chemicals, paint, and other waste products will be looked for and recorded.

Smoke testing will probably be used as a last strategy to determine an illicit discharge source. If implemented, the City will utilize smoke testing practices consistent with industry standards. The City will also contact EGLE prior to smoke testing and a reasonable effort will be made to contact all property and facility owners that may witness the effects of the testing.

Prioritization of Illicit Discharges and Connections

Staff response to outfall evaluations and reports of spills and other releases into the MS4 will be prioritized based on all available information and current staff availability. A determination will be made whether a Significant Illicit Discharge meets 24-hour notification obligations by judging if it has "the potential to seriously affect surface water quality, designated uses, and public health." Generally, the categorical prioritization strategy is as follows.

1. Dry Weather Significant Illicit Discharges – Untreated or Partially Treated Human Sewage
2. Dry Weather Significant Illicit Discharges – Non-Sewage Related but Determined to Meet 24-hour Notification Criteria
3. Dry Weather Significant Illicit Discharges – Determined Not to Meet 24-hour Notification Criteria
4. Dry Weather Intermittent Flows
5. Dry Weather Non-Significant Illicit Discharges

6. Wet Weather Illicit Discharges
7. Private Outfall and Non-MS4 Discharges*

Routine scheduled outfall evaluations and subsequent (every four years) outfall visits will have less priority than responding to known or suspected illicit outfall discharges. Suspected illicit connections not related to known illicit flows will also be prioritized. Priorities will be based on factors such as: known water quality problem areas; perceived higher risk land use; environmentally sensitive areas; non-sewered areas; water bodies within City jurisdiction; current and potential project areas; funding opportunities; relevant information obtained from field investigations; reports from City and non-City organizations; and other acquired information.

*If City staff observes apparent illicit discharges directly into the waters of the state or via private outfalls, EGLE will be notified as soon as possible. The EGLE Spill or Release Report will be referenced and submitted as necessary (see Appendix).

PUBLIC INFORMATION REPORTING AND RESPONSE TRACKING SYSTEM

Public Calls and Other Contacts

A public reporting system for illicit discharges and/or connections has been prepared to record, investigate, source identify, and perform corrective action in an attempt to resolve reports to the maximum extent practicable. It is important to note that City staff are not certified or trained as "First Responders" to chemical spills. Consequently, decisions regarding any required remediation actions will be directed to the Kalamazoo County HazMat Team who will make the determination whether they contact an appropriate remedial firm to perform the necessary remedial action and invoice the responsible party or if the responsible party will directly retain the necessary firm. The City has a standing contract with an emergency contractor to perform emergency environmental work. Subsequently, the City would attempt to identify a responsible party to collect reimbursement for accrued expenses as applicable.

Regular Business Hours

During regular business hours, reports from the public regarding illicit discharges and connections are typically made to 311 or 269-337-8000.

When 311 receives a report that is suspected to be an illicit discharge a Work Request is created in Lucity and an email notification is sent to the Environmental Programs Manager. From there the Environmental Programs Manager coordinates with the Environmental Compliance Specialist to authorize environmental staff to investigate the report. Public Services staff will consider each report and prioritize it based on all available information. Staff will then determine the appropriate response, based on the information provided and the availability of staff. Response options include, but are limited to, sending the Technician III staff, the Environmental Compliance Specialist, the Environmental Support Specialist or the Environmental Programs Manager to the site to perform an initial field assessment regarding the need for field/source investigations, or whether the Public Safety Central Dispatch (269-337-8994) should be contacted to

request that the Hazmat Team be dispatched to the site, or staff may immediately contact Central Dispatch prior to performing an initial field assessment.

Non-Regular Business Hours (After Hours)

Outside of regular business hours calls can be made to the Water and Sewer Emergencies line by calling (269) 337-8036. Calls can also be made to the EGLE PEAS Hotline (800) 292-4706.

Internal Record Documentation

Environmental Services staff also tracks and records all outfall visits, locational information, historical and current inspection status information, completion of IDEP forms, site condition, and any other relevant notes in Lucity. In 2021, the City of Kalamazoo implemented Lucity for tracking of stormwater dry weather outfall evaluations, IDEP tracking, and all stormwater inspection and maintenance work order workflow processes and documentation. Prior to 2021 a general outfall master electronic spreadsheet was used and generally maintained on a monthly basis by the Technician I/II. The additional forms discussed within this IDEP will track progress of the report response and field investigation until the issue is resolved. All relevant information will be incorporated into individual stormwater outfall files for internal purposes. The Appendix contains all subject IDEP forms.

Public Outreach

In 2021 and 2022, the City of Kalamazoo, along with other MS4 permittees in the County, obtained grants to enhance public education through comprehensive marketing strategies through the www.protectyourwater.net/KSWG platform. The educational MS4 group operates under the unofficial name of the Kalamazoo Stormwater Working Group (KSWG). The public will continue to be notified of the existence, value, and proper use of the public reporting system via various means, including the website www.protectyourwater.net, the City's annual Water Quality Report (Consumer's Confidence Report), communication through the Public Education Plan efforts, and at City Commission and other various meetings and presentations, newsletters and other mailings initiated via its Public Participation Process Plans. The Stormwater Ordinance will be publicized in similar ways, as deemed appropriate.

Information Sharing/Other Cooperative Efforts

The City will continue to work with and assist the other MS4s and stakeholders. The City is committed to participating in the informational exchange of IDEPs, is represented at various inter-organizational stormwater related meetings, has provided other MS4s and other interested parties all of its IDEP documentation forms and copies of the Stormwater Ordinance, provided a presentation to the MS4s regarding the Wellhead Protection Zoning Overlay and Performance Standards, periodically informs MS4s of relevant guidance documents, and occasionally provides suggestions based on its experience with the program to date. City staff also participate on the EGLE MS4 Implementation Group.

Continuation of Existing Activities to Minimize Polluted Stormwater Discharges

An on-going effort to educate the citizens about water quality issues – perhaps most significantly that there are two separate sewer systems - is critical to the success of decreasing illegal dumping into the stormwater catch basins/inlets. This issue is discussed in the Public Education Plan and past Stormwater Progress Reports. The City's Stormwater Ordinance requires the notification of spills and all the requirements involved therein. Illegal dumping directly or indirectly into storm catch basins and inlets, and spills collected by drain catch basins and inlets, are typically discovered by either visual and/or olfactory observations and are subsequently reported by citizens or City field crews (e.g., street sweepers).

The City plans to continue its many efforts to minimize the occurrence of adverse stormwater discharges. For example, the City promotes and/or enforces its weed and tall grass ordinance, fall leaf collection, monthly brush collection, holiday tree collection, curbside recycling program, monthly household junk and debris pickup, and participates in the Kalamazoo County Household Hazardous Waste Program. The City also sponsors and promotes other related efforts, including: special household junk, debris and trash drop off opportunities at transfer stations; special recycling events (televisions and computers); free composting guides; free natural landscaping guides; free firewood, compost, and woodchips; and offers information to citizens on how and where to recycle a number of other types of materials. The City utilizes its Site Plan Review to require stormwater control and treatment to new and re-development, if appropriate. These and other efforts such as street sweeping and proper road salt storage and use management, are discussed in detail in other sections of the Stormwater Pollution Prevention Initiative (SWPPI).

In addition, efforts will continue to improve communications within the City departments, including those involved with the Building Code, Soil Erosion and Sedimentation Control, the Fire Marshal Office, Engineering, and other field inspection and service groups that provide information regarding apparent illicit connections they may observe from routine field work/inspections.

IDEP EFFECTIVENESS

The experience gained from the first Permit cycle has increased the overall effectiveness and efficiency of the IDEP. Consequently, the primary method for assessing the effectiveness of the IDEP will be to determine the progress of its components, such as the number of outfall inspections, field investigations, source investigations, facility evaluations, the number of illicit connections discovered, and the number of illicit connections that have been eliminated. In addition, an assessment will be made as to how effective the IDEP is regarding its responses to and tracking of reports of illicit discharges. Finally, staff training, documentation, and internal and external communication and correspondence will be evaluated for effectiveness.

Documentation will be provided to identify the locations of illicit connections and discharges, and what the responses were and how effective the results were. Inter-MS4 flows will also be documented.

IMPLEMENTATION SCHEDULE

The accuracy of the Implementation Schedule will be dependent upon the time needed to perform the actual outfall source investigations – a highly variable factor that is related to the specific complexity and comprehensive nature of the individual situations. Consequently, actual numbers and estimated dates of accomplishments may vary according to the constant re-prioritization of IDEP related work. Thus, the primary measurement of the success of the IDEP will be effectively meeting the overall IDEP elements. Secondly, success will be measured by accomplishing the below activities within the associated time schedule below.

Table 1 shows the Dry Weather Outfall Evaluation Schedule for 2022 – 2025. Please note that this schedule is subject to change. The implementation schedule within Table 1 for the outfalls is prioritized and organized based on all work performed to date.

Table 2 shows the jurisdictional discharge points, the discharge point structure, the destination outfall, and the jurisdiction receiving the discharge. Since any existence of dry weather flows from our MS4 passing through these locations should be detected by the respective MS4s via their IDEP screening, flow inspections of these structures will not be deemed as a priority. However, if the schedule allows, we will make a reasonable effort to check for flows in these structures during each dry weather outfall evaluation cycle.

SUMMARY

The City's experience to date indicates that the IDEP will be an ongoing and dynamic process and will need to be periodically refined based on acquired knowledge and experience and review of new information as it becomes available. Since the City is the primary IDEP authority for issues within its jurisdiction, it reserves the right to perform and finance its IDEP in a manner it thinks is the most appropriate for its stormwater system and natural water resources.

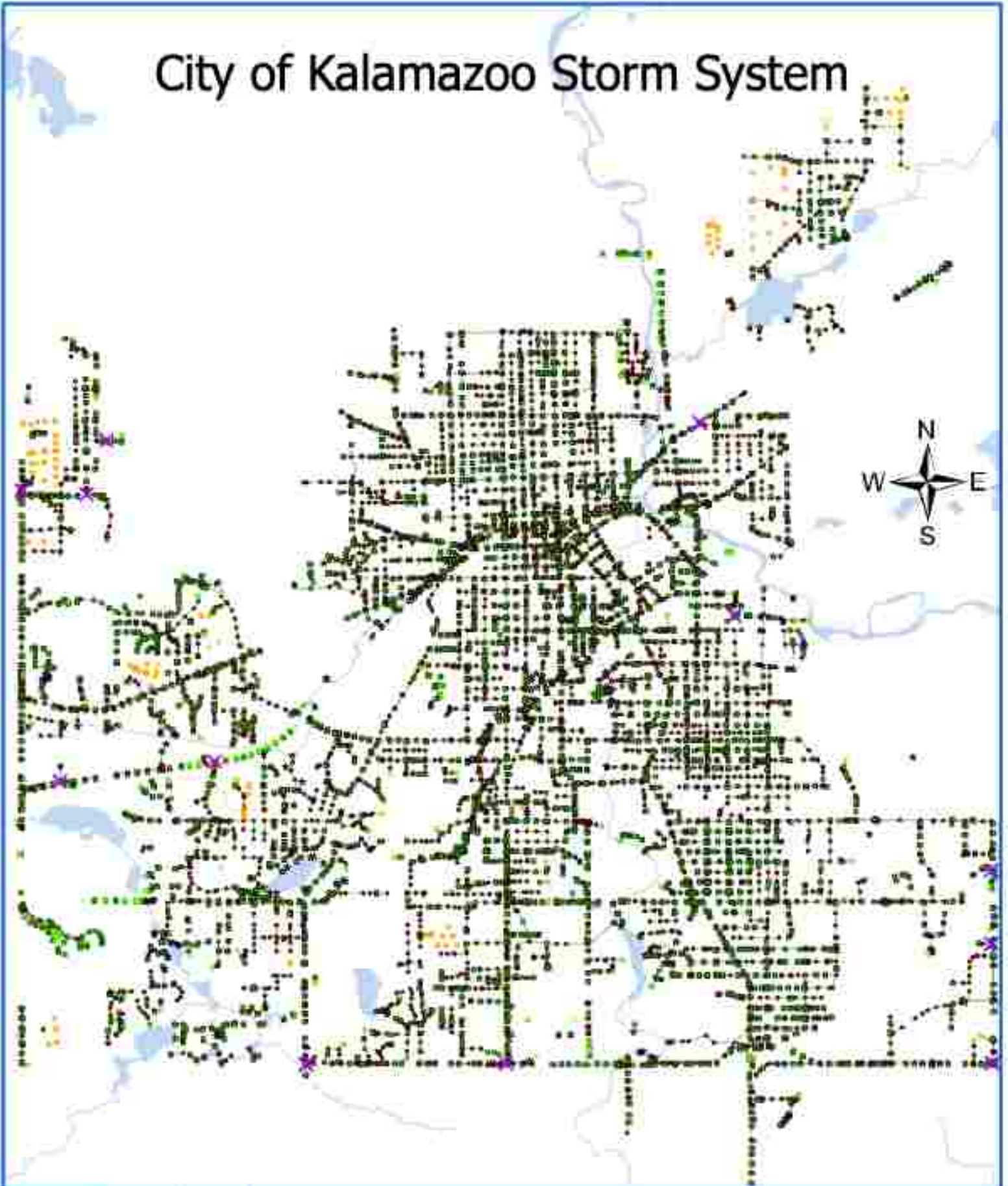
However, the City recognizes the need and value of its participation in inter-organizational cooperative arrangements to supplement all of the individual MS4 IDEP programs as necessary to protect the waters of the state. Subsequently, the City will continue its participation in a cooperative IDEP effort (IDEP Peer Group) if the cooperative approach is cost effective, timely, and conducted in a professional manner.

In summary, this IDEP incorporates what the City determines are reasonable and relevant updates associated with specific stormwater collection system and is well within the allowed flexibility of an individual MS4 IDEP. The IDEP meets both the compliance requirements and provides a reasonable, logical and methodical strategy to effectively research, field investigate, prioritize, and eliminate illicit discharges and connections.

IDEP APPENDIX

Figure 1: City of Kalamazoo Storm System

City of Kalamazoo Storm System



Legend

- | | | | | |
|-------------------|-------------------|-------------------|-----------------|--------------------------|
| Outfall to Water | call other values | Leaching Basin | City of Portage | State Waters |
| Outfall to Ground | Culvert In | Stormwater Pump | KCCDC | Jurisdictional Discharge |
| Private Outfall | Culvert Out | City of Kalamazoo | HDOT | |
| Manhole | Inlet | City of Parchment | Private | |
| call other values | Inlet Outfall | | PCDC | |

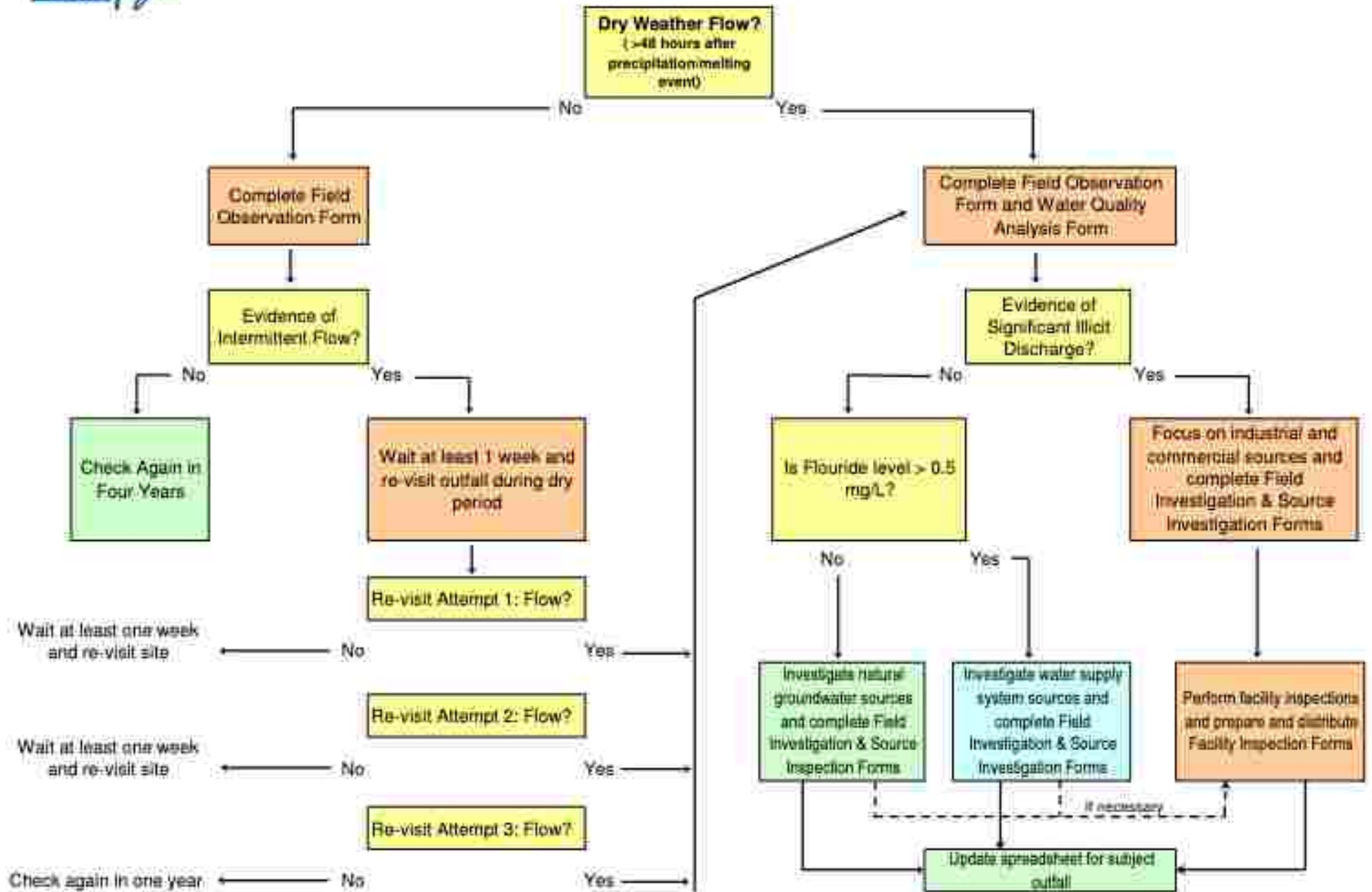


IDEP APPENDIX

Figure 2: Action Chart for Outfall Field Evaluation



ACTION CHART FOR OUTFALL FIELD EVALUATION



IDEP APPENDIX

Table 1: Outfall Status Table Example

*a Lucity generated table will replace the outfall status excel spreadsheet starting in 2022

Sl. No.	Project Name	Category	Phase	Start Date	End Date	Actual Cost	Budgeted Cost	Actual Progress (%)	Budgeted Progress (%)	Remarks	Status	Remarks
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Sl. No.	Project Name	Category	Phase	Start Date	End Date	Progress (%)	Budget (Lakhs)	Actual Cost (Lakhs)	Revenue (Lakhs)	Profit (Lakhs)	Remarks	Status
1	Project A	Construction	Phase 1	2023-01-01	2023-03-31	100	50	50	0	0		Completed
2	Project B	Construction	Phase 2	2023-04-01	2023-06-30	85	75	65	10	10		Completed
3	Project C	Construction	Phase 3	2023-07-01	2023-09-30	60	90	55	35	35		Completed
4	Project D	Construction	Phase 4	2023-10-01	2023-12-31	40	110	45	65	65		Completed
5	Project E	Construction	Phase 5	2024-01-01	2024-03-31	20	130	25	105	105		Completed
6	Project F	Construction	Phase 6	2024-04-01	2024-06-30	10	150	15	135	135		Completed
7	Project G	Construction	Phase 7	2024-07-01	2024-09-30	5	170	10	160	160		Completed
8	Project H	Construction	Phase 8	2024-10-01	2024-12-31	2	190	5	185	185		Completed
9	Project I	Construction	Phase 9	2025-01-01	2025-03-31	1	210	2	208	208		Completed
10	Project J	Construction	Phase 10	2025-04-01	2025-06-30	0	230	0	230	230		Completed
11	Project K	Construction	Phase 11	2025-07-01	2025-09-30	0	250	0	250	250		Completed
12	Project L	Construction	Phase 12	2025-10-01	2025-12-31	0	270	0	270	270		Completed
13	Project M	Construction	Phase 13	2026-01-01	2026-03-31	0	290	0	290	290		Completed
14	Project N	Construction	Phase 14	2026-04-01	2026-06-30	0	310	0	310	310		Completed
15	Project O	Construction	Phase 15	2026-07-01	2026-09-30	0	330	0	330	330		Completed
16	Project P	Construction	Phase 16	2026-10-01	2026-12-31	0	350	0	350	350		Completed
17	Project Q	Construction	Phase 17	2027-01-01	2027-03-31	0	370	0	370	370		Completed
18	Project R	Construction	Phase 18	2027-04-01	2027-06-30	0	390	0	390	390		Completed
19	Project S	Construction	Phase 19	2027-07-01	2027-09-30	0	410	0	410	410		Completed
20	Project T	Construction	Phase 20	2027-10-01	2027-12-31	0	430	0	430	430		Completed
21	Project U	Construction	Phase 21	2028-01-01	2028-03-31	0	450	0	450	450		Completed
22	Project V	Construction	Phase 22	2028-04-01	2028-06-30	0	470	0	470	470		Completed
23	Project W	Construction	Phase 23	2028-07-01	2028-09-30	0	490	0	490	490		Completed
24	Project X	Construction	Phase 24	2028-10-01	2028-12-31	0	510	0	510	510		Completed
25	Project Y	Construction	Phase 25	2029-01-01	2029-03-31	0	530	0	530	530		Completed
26	Project Z	Construction	Phase 26	2029-04-01	2029-06-30	0	550	0	550	550		Completed
27	Project AA	Construction	Phase 27	2029-07-01	2029-09-30	0	570	0	570	570		Completed
28	Project AB	Construction	Phase 28	2029-10-01	2029-12-31	0	590	0	590	590		Completed
29	Project AC	Construction	Phase 29	2030-01-01	2030-03-31	0	610	0	610	610		Completed
30	Project AD	Construction	Phase 30	2030-04-01	2030-06-30	0	630	0	630	630		Completed
31	Project AE	Construction	Phase 31	2030-07-01	2030-09-30	0	650	0	650	650		Completed
32	Project AF	Construction	Phase 32	2030-10-01	2030-12-31	0	670	0	670	670		Completed
33	Project AG	Construction	Phase 33	2031-01-01	2031-03-31	0	690	0	690	690		Completed
34	Project AH	Construction	Phase 34	2031-04-01	2031-06-30	0	710	0	710	710		Completed
35	Project AI	Construction	Phase 35	2031-07-01	2031-09-30	0	730	0	730	730		Completed
36	Project AJ	Construction	Phase 36	2031-10-01	2031-12-31	0	750	0	750	750		Completed
37	Project AK	Construction	Phase 37	2032-01-01	2032-03-31	0	770	0	770	770		Completed
38	Project AL	Construction	Phase 38	2032-04-01	2032-06-30	0	790	0	790	790		Completed
39	Project AM	Construction	Phase 39	2032-07-01	2032-09-30	0	810	0	810	810		Completed
40	Project AN	Construction	Phase 40	2032-10-01	2032-12-31	0	830	0	830	830		Completed
41	Project AO	Construction	Phase 41	2033-01-01	2033-03-31	0	850	0	850	850		Completed
42	Project AP	Construction	Phase 42	2033-04-01	2033-06-30	0	870	0	870	870		Completed
43	Project AQ	Construction	Phase 43	2033-07-01	2033-09-30	0	890	0	890	890		Completed
44	Project AR	Construction	Phase 44	2033-10-01	2033-12-31	0	910	0	910	910		Completed
45	Project AS	Construction	Phase 45	2034-01-01	2034-03-31	0	930	0	930	930		Completed
46	Project AT	Construction	Phase 46	2034-04-01	2034-06-30	0	950	0	950	950		Completed
47	Project AU	Construction	Phase 47	2034-07-01	2034-09-30	0	970	0	970	970		Completed
48	Project AV	Construction	Phase 48	2034-10-01	2034-12-31	0	990	0	990	990		Completed
49	Project AW	Construction	Phase 49	2035-01-01	2035-03-31	0	1010	0	1010	1010		Completed
50	Project AX	Construction	Phase 50	2035-04-01	2035-06-30	0	1030	0	1030	1030		Completed
51	Project AY	Construction	Phase 51	2035-07-01	2035-09-30	0	1050	0	1050	1050		Completed
52	Project AZ	Construction	Phase 52	2035-10-01	2035-12-31	0	1070	0	1070	1070		Completed
53	Project BA	Construction	Phase 53	2036-01-01	2036-03-31	0	1090	0	1090	1090		Completed
54	Project BB	Construction	Phase 54	2036-04-01	2036-06-30	0	1110	0	1110	1110		Completed
55	Project BC	Construction	Phase 55	2036-07-01	2036-09-30	0	1130	0	1130	1130		Completed
56	Project BD	Construction	Phase 56	2036-10-01	2036-12-31	0	1150	0	1150	1150		Completed
57	Project BE	Construction	Phase 57	2037-01-01	2037-03-31	0	1170	0	1170	1170		Completed
58	Project BF	Construction	Phase 58	2037-04-01	2037-06-30	0	1190	0	1190	1190		Completed
59	Project BG	Construction	Phase 59	2037-07-01	2037-09-30	0	1210	0	1210	1210		Completed
60	Project BH	Construction	Phase 60	2037-10-01	2037-12-31	0	1230	0	1230	1230		Completed
61	Project BI	Construction	Phase 61	2038-01-01	2038-03-31	0	1250	0	1250	1250		Completed
62	Project BJ	Construction	Phase 62	2038-04-01	2038-06-30	0	1270	0	1270	1270		Completed
63	Project BK	Construction	Phase 63	2038-07-01	2038-09-30	0	1290	0	1290	1290		Completed
64	Project BL	Construction	Phase 64	2038-10-01	2038-12-31	0	1310	0	1310	1310		Completed
65	Project BM	Construction	Phase 65	2039-01-01	2039-03-31	0	1330	0	1330	1330		Completed
66	Project BN	Construction	Phase 66	2039-04-01	2039-06-30	0	1350	0	1350	1350		Completed
67	Project BO	Construction	Phase 67	2039-07-01	2039-09-30	0	1370	0	1370	1370		Completed
68	Project BP	Construction	Phase 68	2039-10-01	2039-12-31	0	1390	0	1390	1390		Completed
69	Project BQ	Construction	Phase 69	2040-01-01	2040-03-31	0	1410	0	1410	1410		Completed
70	Project BR	Construction	Phase 70	2040-04-01	2040-06-30	0	1430	0	1430	1430		Completed
71	Project BS	Construction	Phase 71	2040-07-01	2040-09-30	0	1450	0	1450	1450		Completed
72	Project BT	Construction	Phase 72	2040-10-01	2040-12-31	0	1470	0	1470	1470		Completed
73	Project BU	Construction	Phase 73	2041-01-01	2041-03-31	0	1490	0	1490	1490		Completed
74	Project BV	Construction	Phase 74	2041-04-01	2041-06-30	0	1510	0	1510	1510		Completed
75	Project BW	Construction	Phase 75	2041-07-01	2041-09-30	0	1530	0	1530	1530		Completed
76	Project BX	Construction	Phase 76	2041-10-01	2041-12-31	0	1550	0	1550	1550		Completed
77	Project BY	Construction	Phase 77	2042-01-01	2042-03-31	0	1570	0	1570	1570		Completed
78	Project BZ	Construction	Phase 78	2042-04-01	2042-06-30	0	1590	0	1590	1590		Completed
79	Project CA	Construction	Phase 79	2042-07-01	2042-09-30	0	1610	0	1610	1610		Completed
80	Project CB	Construction	Phase 80	2042-10-01	2042-12-31	0	1630	0	1630	1630		Completed
81	Project CC	Construction	Phase 81	2043-01-01	2043-03-31	0	1650	0	1650	1650		Completed
82	Project CD	Construction	Phase 82	2043-04-01	2043-06-30	0	1670	0	1670	1670		Completed
83	Project CE	Construction	Phase 83	2043-07-01	2043-09-30	0	1690	0	1690	1690		Completed
84	Project CF	Construction	Phase 84	2043-10-01	2043-12-31	0	1710	0	1710	1710		Completed
85	Project CG	Construction	Phase 85	2044-01-01	2044-03-31	0	1730	0	1730	1730		Completed
86	Project CH	Construction	Phase 86	2044-04-01	2044-06-30	0	1750	0	1750	1750		Completed
87	Project CI	Construction	Phase 87	2044-07-01	2044-09-30	0	1770	0	1770	1770		Completed
88	Project CJ	Construction	Phase 88	2044-10-01	2044-12-31	0	1790	0	1790	1790		Completed
89	Project CK	Construction	Phase 89	2045-01-01	2045-03-31	0	1810	0	1810	1810		Completed
90	Project CL	Construction	Phase 90	2045-04-01	2045-06-30	0	1830	0	1830	1830		Completed
91	Project CM	Construction	Phase 91	2045-07-01	2045-09-30	0	1850	0	1850	1850		Completed
92	Project CN	Construction	Phase 92	2045-10-01	2045-12-31	0	1870	0	1870	1870		Completed
93	Project CO	Construction	Phase 93	2046-01-01	2046-03-31	0	1890	0	1890	1890		Completed
94	Project CP	Construction	Phase 94	2046-04-01	2046-06-30	0	1910	0	1910	1910		Completed
95	Project CQ	Construction	Phase 95	2046-07-01	2046-09-30	0	1930	0	1930	1930		Completed
96	Project CR	Construction	Phase 96	2046-10-01	2046-12-31	0	1950	0	1950	1950		Completed
97	Project CS	Construction	Phase 97	2047-01-01	2047-03-31	0	1970	0</				

ID	Project Name	Project Type	Phase	Start Date	End Date	Progress (%)	Current Status	Next Milestone	Responsible Party	Notes	Comments	Owner	Project Lead
101	Project Alpha	Software Development	Phase 1	2023-01-15	2023-03-31	100	Completed	Final Review	John Doe	Project completed successfully.		John Doe	John Doe
102	Project Beta	Hardware Integration	Phase 2	2023-02-01	2023-04-15	85	In Progress	Integration Testing	Jane Smith	Minor delays due to hardware availability.		Jane Smith	Jane Smith
103	Project Gamma	System Migration	Phase 3	2023-03-01	2023-05-31	60	In Progress	Data Migration	Mike Johnson	Complex migration process.		Mike Johnson	Mike Johnson
104	Project Delta	UI Redesign	Phase 1	2023-04-01	2023-06-30	40	In Progress	Design Mockups	Sarah Lee	Client feedback incorporated.		Sarah Lee	Sarah Lee
105	Project Epsilon	Backend API	Phase 2	2023-05-01	2023-07-31	70	In Progress	API Development	David Kim	API endpoints being finalized.		David Kim	David Kim
106	Project Zeta	Database Optimization	Phase 1	2023-06-01	2023-08-31	50	In Progress	Performance Analysis	Emily White	Identifying bottlenecks.		Emily White	Emily White
107	Project Eta	Security Audit	Phase 1	2023-07-01	2023-09-30	30	In Progress	Vulnerability Scans	Chris Brown	External audit scheduled.		Chris Brown	Chris Brown
108	Project Theta	Deployment Planning	Phase 2	2023-08-01	2023-10-31	20	In Progress	Rollback Strategy	Alex Green	Deployment environment setup.		Alex Green	Alex Green
109	Project Iota	Documentation	Phase 1	2023-09-01	2023-11-30	10	In Progress	Requirements Gathering	Mia Black	Documentation structure defined.		Mia Black	Mia Black
110	Project Kappa	Testing	Phase 2	2023-10-01	2024-01-31	5	In Progress	Unit Testing	Noah Grey	Test cases being developed.		Noah Grey	Noah Grey
111	Project Lambda	Deployment	Phase 3	2023-11-01	2024-02-28	0	Not Started	Go-Live	Oliver Blue	Final preparations for launch.		Oliver Blue	Oliver Blue
112	Project Mu	Post-Launch	Phase 1	2024-01-01	2024-03-31	0	Not Started	Monitoring	Sophia Purple	Monitoring system configuration.		Sophia Purple	Sophia Purple
113	Project Nu	Feedback Loop	Phase 1	2024-02-01	2024-04-30	0	Not Started	User Surveys	Liam Yellow	Survey design in progress.		Liam Yellow	Liam Yellow
114	Project Xi	Future Roadmap	Phase 1	2024-03-01	2024-05-31	0	Not Started	Strategic Planning	Ava Orange	Next phase of development.		Ava Orange	Ava Orange
115	Project Omicron	Compliance	Phase 1	2024-04-01	2024-06-30	0	Not Started	GDPR Audit	Ethan Green	Legal review initiated.		Ethan Green	Ethan Green
116	Project Pi	Partnership	Phase 1	2024-05-01	2024-07-31	0	Not Started	Vendor Selection	Madison Blue	Identifying potential partners.		Madison Blue	Madison Blue
117	Project Rho	Marketing	Phase 1	2024-06-01	2024-08-31	0	Not Started	Campaign Strategy	Lucas Purple	Marketing strategy development.		Lucas Purple	Lucas Purple
118	Project Sigma	Customer Support	Phase 1	2024-07-01	2024-09-30	0	Not Started	Support Portal	Zoe Yellow	Support portal design.		Zoe Yellow	Zoe Yellow
119	Project Tau	Analytics	Phase 1	2024-08-01	2024-10-31	0	Not Started	Data Collection	Ben Orange	Analytics dashboard setup.		Ben Orange	Ben Orange
120	Project Upsilon	Reporting	Phase 1	2024-09-01	2024-11-30	0	Not Started	Report Generation	Chloe Green	Report templates creation.		Chloe Green	Chloe Green
121	Project Phi	Integration	Phase 1	2024-10-01	2025-01-31	0	Not Started	System Interfacing	Wyatt Blue	Integration with external systems.		Wyatt Blue	Wyatt Blue
122	Project Chi	Scalability	Phase 1	2024-11-01	2025-02-28	0	Not Started	Load Testing	Scarlett Purple	Performance optimization.		Scarlett Purple	Scarlett Purple
123	Project Psi	Security	Phase 1	2025-01-01	2025-03-31	0	Not Started	Penetration Test	Leo Yellow	Security audit and testing.		Leo Yellow	Leo Yellow
124	Project Omega	Final Review	Phase 1	2025-02-01	2025-04-30	0	Not Started	Final Audit	Aria Orange	Final project review.		Aria Orange	Aria Orange

ID	Project Name	Client	Location	Start Date	End Date	Phase	Status	Manager	Team Lead	Budget	Actual Cost	Progress %	Notes
001	Project Alpha	Client A	Location X	2023-01-01	2023-03-31	Phase 1	Completed	John Doe	Jane Smith	\$100,000	\$100,000	100%	Successful launch.
002	Project Beta	Client B	Location Y	2023-02-15	2023-05-15	Phase 2	In Progress	John Doe	Jane Smith	\$150,000	\$120,000	80%	Minor delays in procurement.
003	Project Gamma	Client C	Location Z	2023-03-01	2023-06-30	Phase 1	On Hold	John Doe	Jane Smith	\$80,000	\$50,000	60%	Client onboarding issues.
004	Project Delta	Client D	Location X	2023-04-01	2023-07-31	Phase 1	Completed	John Doe	Jane Smith	\$120,000	\$120,000	100%	Exceeded expectations.
005	Project Epsilon	Client E	Location Y	2023-05-01	2023-08-31	Phase 2	In Progress	John Doe	Jane Smith	\$90,000	\$70,000	75%	Scope creep managed.
006	Project Zeta	Client F	Location Z	2023-06-01	2023-09-30	Phase 1	On Hold	John Doe	Jane Smith	\$110,000	\$80,000	70%	Resource allocation issues.
007	Project Eta	Client G	Location X	2023-07-01	2023-10-31	Phase 1	Completed	John Doe	Jane Smith	\$130,000	\$130,000	100%	Client highly satisfied.
008	Project Theta	Client H	Location Y	2023-08-01	2023-11-30	Phase 2	In Progress	John Doe	Jane Smith	\$140,000	\$110,000	80%	Complex integration.
009	Project Iota	Client I	Location Z	2023-09-01	2023-12-31	Phase 1	On Hold	John Doe	Jane Smith	\$100,000	\$70,000	70%	Market conditions impact.
010	Project Kappa	Client J	Location X	2023-10-01	2024-01-31	Phase 1	Completed	John Doe	Jane Smith	\$110,000	\$110,000	100%	Smooth execution.
011	Project Lambda	Client K	Location Y	2023-11-01	2024-02-28	Phase 2	In Progress	John Doe	Jane Smith	\$120,000	\$90,000	75%	Scope changes.
012	Project Mu	Client L	Location Z	2023-12-01	2024-03-31	Phase 1	On Hold	John Doe	Jane Smith	\$90,000	\$60,000	65%	Client onboarding.
013	Project Nu	Client M	Location X	2024-01-01	2024-04-30	Phase 1	Completed	John Doe	Jane Smith	\$100,000	\$100,000	100%	Successful launch.
014	Project Xi	Client N	Location Y	2024-02-01	2024-05-31	Phase 2	In Progress	John Doe	Jane Smith	\$110,000	\$80,000	70%	Complex integration.
015	Project Omicron	Client O	Location Z	2024-03-01	2024-06-30	Phase 1	On Hold	John Doe	Jane Smith	\$120,000	\$90,000	75%	Resource allocation.
016	Project Pi	Client P	Location X	2024-04-01	2024-07-31	Phase 1	Completed	John Doe	Jane Smith	\$130,000	\$130,000	100%	Client highly satisfied.
017	Project Rho	Client Q	Location Y	2024-05-01	2024-08-31	Phase 2	In Progress	John Doe	Jane Smith	\$140,000	\$110,000	80%	Scope changes.
018	Project Sigma	Client R	Location Z	2024-06-01	2024-09-30	Phase 1	On Hold	John Doe	Jane Smith	\$100,000	\$70,000	70%	Market conditions.
019	Project Tau	Client S	Location X	2024-07-01	2024-10-31	Phase 1	Completed	John Doe	Jane Smith	\$110,000	\$110,000	100%	Smooth execution.
020	Project Upsilon	Client T	Location Y	2024-08-01	2024-11-30	Phase 2	In Progress	John Doe	Jane Smith	\$120,000	\$90,000	75%	Complex integration.
021	Project Phi	Client U	Location Z	2024-09-01	2025-01-31	Phase 1	On Hold	John Doe	Jane Smith	\$130,000	\$100,000	75%	Resource allocation.
022	Project Chi	Client V	Location X	2024-10-01	2025-02-28	Phase 1	Completed	John Doe	Jane Smith	\$140,000	\$140,000	100%	Client highly satisfied.
023	Project Psi	Client W	Location Y	2024-11-01	2025-03-31	Phase 2	In Progress	John Doe	Jane Smith	\$150,000	\$120,000	80%	Scope changes.
024	Project Omega	Client X	Location Z	2024-12-01	2025-04-30	Phase 1	On Hold	John Doe	Jane Smith	\$100,000	\$70,000	70%	Market conditions.
025	Project Alpha	Client A	Location X	2025-01-01	2025-03-31	Phase 1	Completed	John Doe	Jane Smith	\$110,000	\$110,000	100%	Successful launch.
026	Project Beta	Client B	Location Y	2025-02-01	2025-05-31	Phase 2	In Progress	John Doe	Jane Smith	\$120,000	\$90,000	75%	Complex integration.
027	Project Gamma	Client C	Location Z	2025-03-01	2025-06-30	Phase 1	On Hold	John Doe	Jane Smith	\$130,000	\$100,000	75%	Resource allocation.
028	Project Delta	Client D	Location X	2025-04-01	2025-07-31	Phase 1	Completed	John Doe	Jane Smith	\$140,000	\$140,000	100%	Client highly satisfied.
029	Project Epsilon	Client E	Location Y	2025-05-01	2025-08-31	Phase 2	In Progress	John Doe	Jane Smith	\$150,000	\$120,000	80%	Scope changes.
030	Project Zeta	Client F	Location Z	2025-06-01	2025-09-30	Phase 1	On Hold	John Doe	Jane Smith	\$100,000	\$70,000	70%	Market conditions.

ID	Project Name	Start Date	End Date	Status	Progress (%)	Issues	Comments	Owner	Priority	Dependencies	Resources	Notes	Last Update
001	Project A	2023-01-01	2023-03-31	Completed	100	0	Project completed successfully.	John Doe	High	None	5		2023-03-31
002	Project B	2023-02-01	2023-04-30	In Progress	75	2	Minor issues with timeline.	Jane Smith	Medium	Project A	3		2023-04-15
003	Project C	2023-03-01	2023-05-31	On Hold	0	5	Resources allocated elsewhere.	Mike Johnson	Low	Project B	2		2023-03-01
004	Project D	2023-04-01	2023-06-30	Planned	0	0	Initial planning phase.	Sarah Lee	Medium	Project C	4		2023-04-01

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 Project Management System
 Version 1.0.0

Project ID: PM-2023-001
 Date: 2023-04-15

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IDEP APPENDIX

Table 2: Jurisdictional Discharge Points



Stormwater Jurisdictional Discharge Points Updated 2022

Discharge Point ID	Location	Outfall ID	Jurisdiction Receiving Discharge
STMHKT18226JDP	Devonshire & Turwill	STOGKT18238	KCRC
STMHKC18165JDP	W. Main & Drake	STOWKT18259	MDOT
STMHKC18147JDP	W. Main & Northampton	STOWKT181019	MDOT
STMHKC30119JDP	Seneca Ln. & Stadium	STOGKC30138	MDOT
STMHKC29537JDP	Rambling & Stadium	STOWKC29360	MDOT
STCBPC051JDP	Oakland & Kilgore	STOWAPC052	City of Portage
STMHPC041022JDP	Kilgore & S. Westnadge	STOWAKC342500	City of Portage
STCBKC25125JDP	Cork & Sprinkle	STOGCT3013	KCRC
STMHKC36123JDP	Easy St. & Sprinkle	STOWKC364	KCRC
STMHKC36185JDP	Kilgore & Sprinkle	STOGKC366020	KCRC
STMHKC14305JDP	1100 Block of Gulf Rd.	STOWKC15453	MDOT
STMHKC23723JDP	Branch & King Hwy.	STOWKC145	MDOT

Table 2 2022 Discharge points

IDEP APPENDIX

Table 3: Street Segments with No Sanitary Sewer

TABLE 3



Street Segments with No Sanitary Sewers

Street	Limits	Comments
Regent St.	Mt. Olivet to north end	No existing storm sewers
Dennis Ct	Douglas Ave. to west end	No existing storm sewers
Monarch St	Portage St. to Burke St.	No existing storm sewers
Burke St.	Pomeroy to Cork & Sheridan to the north.	Storm sewer at intersection of Sheridan
Pomeroy St.	Portage St. to Burke St.	Storm sewer on street
Affendate St.	Sprinkle Rd to Saldia St.	No existing storm sewers
Barber Ave.	Lovers Ln. to west end	No existing storm sewers
Albany St.	Rose St. to west end	No existing storm sewers
Carolee St.	Duke St. to west end	No existing storm sewers
Kent Ave.	Edgewood to south end	No existing storm sewers
Laird Ave.	Edgewood to south end	No existing storm sewers
Blanche St.	Address #41 to Address #115	No existing storm sewers
Pierce Ave.	Rose St. to Ash St.	No existing storm sewers
DeLoofs Alley	Burdick St. to west end	No existing storm sewers

IDEP APPENDIX

Dye Testing

Talanda, Jean

From: Ashcraft, Susan (EGLE) <ASHCRAFTS@michigan.gov>
Sent: Thursday, September 8, 2022 11:22 AM
To: Talanda, Jean
Subject: [External Email] FW: Tracer Dye Approval for City of Kalamazoo-Kalamazoo River, Arcadia Creek, Axtell Creek, et al.-Kalamazoo County
Attachments: 2022-2023 wrd-rule-97-dye_675423_7 - Copy.pdf

Your NOI for the following has been received and reviewed for completeness: City of Kalamazoo DPS-Kalamazoo River, Arcadia Creek, Axtell Creek, et al.-Kalamazoo County.

The application of tracer dyes to surface waters of the state is approved and effective immediately. Please see the attached dye test certification of approval for notification requirements (No. 5 and No. 6 on attached) and additional information. This approval is permitted through December 31, 2023.

Thanks!

Susan Ashcraft

Susan Ashcraft
Administrative Assistant
Lansing District Office
Water Resources Division, EGLE
ashcrafts@michigan.gov

GENERAL RULE 97 CERTIFICATION OF APPROVAL

R97-20/001

In compliance with the provisions of Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), and Rule R323.1097 of the Part 4, Water Quality Standards, promulgated thereunder, tracer dyes containing certain active ingredients are authorized to be applied to surface waters of the state, directly or indirectly, for the purpose of identifying and eliminating illicit discharges and cross connections; identifying pipeline and tank failures during hydrostatic pressure testing, discharge point location studies, mixing zone mapping, or time-of-passage studies by an entity submitting a complete Notification of Intent under this certification. This certification does not authorize the discharge of tracer dyes for any purposes other than those noted above.

The Notice of Intent and instructions for its submittal are available from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Web site at <https://www.michigan.gov/egle/about/organization/water-resources/rule-97-certifications> or by contacting Water Resources Division at 517-284-5567 or by emailing Sue Ashcraft, Lansing District Office, Water Resources Division at AshcraftS@Michigan.gov.

The application or discharge of tracer dyes to surface waters of the state is authorized by this certification only under, and contingent upon, full compliance with the following conditions:

1. A complete Notice of Intent is submitted.
2. The extent of the dye plume(s) in waters of the state shall be minimized to the maximum extent practicable.
3. The application of tracer dye(s) shall be conducted in accordance with all pertinent label instructions and additional restrictions identified in this certification.
4. Only the tracer dye(s) containing the active ingredients identified in the Acceptable Michigan Tracer Dye List (<https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/WRD/SWAS/rule97-acceptable-dye.pdf>) are authorized under this certification. Upon authorization, the dyes shall only be applied at concentrations resulting in active ingredient concentrations at or below the concentration limit. The active ingredient Chemical Abstract Service (CAS) number and concentration to be used shall also be identified in the applicant's Notification of Intent in order to be authorized.
5. The following agencies shall be notified 48 hours prior to application:
 - Local Municipality (city, township, village, etc.)
 - Local County Health Department
 - Downstream Health Departments if they could be potentially affected.
 - Local Area Emergency Coordinator

6. EGLE, Water Resources Division (WRD), staff shall also be notified 48 hours prior to applications of tracer dyes directly to surface waters of the state. WRD staff must also be notified if visible discharges of tracer dyes are observed in the surface waters of the state as a result of indirect application (illicit discharge and connections studies or discharge point location). Notification to WRD staff shall be as follows:
 - During normal working hours, please contact the appropriate WRD District Office <https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/About-Us/district-offices.pdf>.
 - After hours, weekends, or holidays, please contact the Pollution Emergency Alert System (PEAS) at 1-800-292-4706.
7. The entity applying the tracer dye(s) to the surface waters of the state, or to another area that has the potential to enter waters of the state, shall retain records for a minimum of three years from the date of dye application identifying treatment locations; dates of treatment; name of applicator(s); and the name, CAS number, and concentration of the active ingredient applied at each location.
8. In the event that any of the conditions of this certification are not, or may not be met, the entity applying the tracer dye(s) shall immediately notify the appropriate WRD District Office staff <https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/About-Us/district-offices.pdf> of the area in which the application occurred.
9. The issuance of this certification does not authorize the violation of any federal, state, or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other EGLE permits or approvals from other units of government as may be required by law.

Issued this 7th day of December 2021, by EGLE, this Certification of Approval shall become effective on January 1, 2022, and shall expire at midnight on December 31, 2023.



Jon Russell, Manager
Field Operations Section – Lakes Erie and Huron
Water Resources Division

REQUESTING INDIVIDUAL RULE 97 CERTIFICATION OF APPROVAL WATER RESOURCES GUIDANCE

All projects involving the application of materials to waters of the state for water resource management purposes require a Rule 97 Certification of Approval from the Michigan Department of Environment, Great Lakes and Energy (EGLE).

Rule 97 of the Michigan Water Quality Standards states:

"The application of materials for water resources management projects pursuant to state statutory provisions is not subject to the standards as prescribed by these rules, but all projects shall be reviewed and approved by the commission before application."

Water resource management projects requiring an Individual Rule 97 Certification of Approval include but are not limited to:

- application of products to surface waters of the state to control phosphorus.
- use of explosives to remove ice dams.
- application of rotenone for fish removal.

The following items must accompany any individual Rule 97 Approval request:

1. Description and purpose of the proposed water resource management project. A copy of any relevant standard operating procedures should be provided, if available.
2. Please describe any available water quality data that supports the necessity of the proposed treatment. Please state whether any water quality parameters will be monitored as part of the project. If so, please describe the monitoring regime and parameters to be measured.
3. Name and/or type of water body(ies) potentially affected by the proposed project.
4. Geographic location(s) of the specific water body(ies) potentially affected by the proposed project. The county, township/range/section data should be included to identify the affected site(s) location.
5. Name of material(s) to be applied to the water body(ies). A Safety Data Sheet and product manufacturer's label should also be included. If bacteria are being used in the treatment, all bacterial strains, other ingredients, and any trace name formulations should be listed.

6. Specific time period when the treatment will occur. It is acceptable for a single request to cover multiple treatment applications scheduled over an extended time period (e.g., ten treatments of water body(ies) planned from April to November with a spacing of three to four weeks between treatments).
7. Total load(s) and dosage concentration(s) of the materials to be applied to the water body(ies). If the proposed dosage deviates from dosage recommendations on the manufacturer's label, a brief explanation should be provided.
8. The surface area of the water body(ies) that will potentially be affected by the treatment.
9. The name and contact information for the company selling the material to the applicant.
10. Lake ownership information, whether public or private. If private, what individual, group, or company has ownership.

The requests for approval to apply materials under Rule 97 should be submitted for review to Dr. Sara Nedrich, Water Toxics Unit, Surface Water Assessment Section, Water Resources Division by email at NedrichS@Michigan.gov or by mail at:

Dr. Sara Nedrich
Michigan Department of Environment, Great Lakes, and Energy
Water Resources Division, 3rd Floor South
P.O. Box 30458
Lansing, Michigan 48909-7958

By providing the information described in items 1-10, we will be able to provide a prompt review of your request.

Please contact Dr. Nedrich at NedrichS@Michigan.gov or 517-242-4989 with any questions.

This publication is intended for guidance only and may be impacted by changes in legislation, rules, policies, and procedures adopted after the date of publication. Although this publication makes every effort to teach users how to meet applicable compliance obligations, use of this publication does not constitute the rendering of legal advice.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

To request this material in an alternate format, contact EGLE-Accessibility@Michigan.gov or 800-662-9278.



Contact List for Notification of Intent for Dye Testing
with Potential to Impact Surface Water:

NOTE: 48 hours prior to administering dye testing the following agencies must be notified:

EGLE: Susan Ashcraft ashcrafts@michigan.gov

Kalamazoo County Health Department: Lucas Pols ldpols@kalcounty.com

Kalamazoo Public Safety non-emergency: 269-488-8911, Select 1 to connect to dispatch

Also Email: supervisors@kccda911.org

COK: Wendy Burlingham: burlinghamw@kalamazoo-city.org

COK: 311

COK: Jean Talanda talanda@kalamazoo-city.org

Example Text Script for IDEP Email Notifications - Also provide general project location and dates:

Media Release

For Immediate Release

**Contacts: City of Kalamazoo Department of Public Services
Water Resources Division
269-337-8148**

DYE TESTING DOWNTOWN KALAMAZOO City of Kalamazoo's Illicit Discharge Elimination Program (IDEP)

On (date), Kalamazoo, MI – Personnel of the Kalamazoo Dept. of Public Services will be using tracer dye to assist in the implementation of the City's Illicit Discharge Elimination Program (IDEP) pursuant to its Stormwater Phase II NPDES Permit (MS4 General NPDES Permit). The State of Michigan Department of Environment, Great Lakes and Energy (EGLE) has been notified and has approved the tracer dye testing.

The purpose of the dye testing is to investigate possible illicit discharges to the City's stormwater sewer system. The dye can appear in local surface water like shown in the picture below. This can be alarming

to citizens. Since the storm sewers in the City of Kalamazoo discharge stormwater directly to local lakes, rivers and streams, the City works to protect those local water resources.

Sometimes the City will use dye testing to help eliminate plumbing connections to the stormwater sewer system that should not be connected or to investigate materials being dumped into the stormwater sewer system. The dyes are determined to be safe and approved for use. They work as a very useful tool to help eliminate potentially harmful materials from getting into our local lakes, rivers and streams:



Photo from: <https://ecology.wa.gov/Blog/Posts/April-2013/Stories-about-Getting-to-Clean-Water-Stormwater-Si>

1 Company and Substance / Formulation Identification

Product Identifier

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

Product Code LPY-C

Relevant identified uses of the substance or mixture and uses advised against

No further relevant information available.

Sector of Use SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

Application of the substance / preparation Dyestuff/Colouring agent

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Norlab Inc.

7465 Industrial Parkway

Lorain, Ohio 44053 USA

(800) 247-9422

Department: Regulatory

Emergency Telephone:

1-800-247-9422

2 Hazards Identification

Classification of the substance or mixture

The product is not classified according to the Globally Harmonized System (GHS).

Label elements

GHS label elements Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

Classification system:

NFPA ratings (scale 0 - 4)



Health = 1

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 1

Fire = 0

Reactivity = 0

Other hazards Personal Protection Index: B

3 Composition/Information on Ingredients

Chemical characterization: Mixtures

Description: Mixture of the substances listed below with nonhazardous additions.

Hazardous components: Void

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

4 First-aid measures

(Contd. from page 1)

Description of first aid measures

- **General information:** No special measures required.
- **After inhalation:** Supply fresh air, consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Seek immediate medical advice.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents:**
Use fire fighting measures that suit the environment.
CO₂ extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
 - **Protective equipment:** Wear fully protective suit.
 - **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Product forms slippery surface when combined with water.
Wear protective clothing.
- **Environmental precautions:**
Material is approved for controlled release for certain water tracing applications.
Refer to any and all applicable state or municipal regulations to determine tracer study requirements.
- **Methods and material for containment and cleaning up:**
Clean the affected area carefully; suitable cleaners are:
Warm water
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections**
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

(Cont'd. from page 2)

See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling

Store in cool, dry place in tightly closed receptacles.
No special measures required.

Protection against explosions and fires: No special measures required.

Special Sensitivity: KEEP FROM FREEZING.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements for storerooms and containers: Store only in the original receptacle.

Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Technical systems:

Facilities using this material should be equipped with an eye wash station and a safety shower.

Control parameters

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.
Product is a concentrated colorant and can stain skin and/or various articles. The hazards of this product should be low under normal industrial and commercial use. Handle with care to minimize exposure.

Breathing equipment: Use suitable respiratory protective device in case of insufficient ventilation.

Protection of hands:

Use of gloves suggested; concentrated dye/pigment products may stain skin if directly contacted.

Glove Material: No specified glove material; most liquid-impervious protective gloves will suffice.

Eye protection: General eye protection suggested when handling any chemical product.

Body protection: Protective work clothing

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid

Color: Dark yellow

Odor: Odorless

Odour threshold: Not determined

pH-value at 20°C (68 °F): 8.5 - 11.0

(Cont'd. on page 4)

Safety Data Sheet
OSHA 29 CFR 1910.1200

Reviewed on 01/29/2019

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

(Cont'd. from page 3)

· Change in condition	
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Vapor pressure:	Not determined.
· Density at 20°C (68 °F):	1.27 g/cm ³ (10.598 lbs/gal)
· Relative density	Not determined.
· Solubility in / Miscibility with	
· Water:	Soluble.
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
In the case of a fire, oxides of carbon, fumes, and smoke may be produced.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
 - **LD/LC50 values that are relevant for classification:**
Based on the known information of the ingredients, product is expected to have a low level of acute oral toxicity. (Oral LD50 >2,000 mg/kg)
 - **Primary irritant effect:**
 - **on the skin:** Contact may cause irritation.
 - **on the eye:** Contact may cause irritation.
 - **Sensitization:** No sensitizing effects known.

(Cont'd. on page 5)

USA

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

(Cont'd. from page 4)

Additional toxicological information:

- Carcinogenic categories

- IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

- NTP (National Toxicology Program)

None of the ingredients is listed.

12 Ecological information

- Toxicity

- Aquatic toxicity: No further relevant information available.

- Persistence and degradability: No further relevant information available.

- Behavior in environmental systems:

- Bioaccumulative potential: No further relevant information available.

- Mobility in soil: No further relevant information available.

- Additional ecological information:

- General notes:

Not known to be hazardous to water.

- Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods

- Recommendation: Must be specially treated adhering to official regulations.

- Uncleaned packagings:

- Recommendation: Packaging can be reused or recycled after cleaning.

- Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number

- DOT, ADR, IMDG, IATA Void

- UN proper shipping name

- DOT, ADR, IMDG, IATA Void

- Transport hazard class(es)

- DOT, ADR, IMDG, IATA
- Class Void

- Packing group

- DOT, ADR, IMDG, IATA Void

- Special precautions for user Not applicable.

- UN "Model Regulation": -

1/14

(Cont'd. on page 5)

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

(Cont'd. from page 5)

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

OSHA (Occupational Safety & Health Administration)

None of the ingredients is listed.

GHS label elements Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

16 Other information

The data in this Material Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process. This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of the manufacturer/supplier.

The data on this sheet are related only to the specific material designated herein, and the information available for all ingredients at the time of creation. Manufacturer/supplier assumes no responsibility for use or reliance upon these data. Any information that is withheld herein (such as exact chemical identity or exact concentration) has been reserved as a trade secret as per applicable regulations.

1 Company and Substance / Formulation Identification

- **Product Identifier**
 - **Product name:** LIQUID POWDER TRACING DYE BLUE
 - **Product Code** LP6-C
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / preparation** Dyestuff/Colouring agent
- **Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
Norlab, Inc.
7465 Industrial Parkway
Lorain, OH 44053
 - **Department:** Regulatory
 - **Emergency Telephone:**
1-800-247-9422

2 Hazard(s) identification

- **Classification of the substance or mixture:**
The product is not classified according to the Globally Harmonized System (GHS).
- **Label elements**
 - **GHS label elements** Void
 - **Hazard pictograms** Void
 - **Signal word** Void
 - **Hazard statements** Void
- **Additional information:** Non-classified.
- **Classification system:**
 - **NFPA ratings (scale 0 - 4)**



Health = 1
Fire = 1
Reactivity = 0

- **HMS-ratings (scale 0 - 4)**



Health = 1
Fire = 1
Reactivity = 0

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Hazardous components:** Void

4 First-aid measures

- **Description of first aid measures**
 - **General information:** No special measures required.

Product name: LIQUID POWDER TRACING DYE BLUE

(Cont'd. from page 1)

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents:**
Use fire fighting measures that suit the environment.
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
 - **Protective equipment:** Wear fully protective suit.
 - **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Product forms slippery surface when combined with water.
Wear protective clothing.
- **Environmental precautions:** Keep contaminated washing water and dispose of appropriately.
- **Methods and material for containment and cleaning up:**
Clean the affected area carefully; suitable cleaners are:
Warm water
- **Reference to other sections**
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**
Store in cool, dry place in tightly closed receptacles.
No special measures required.
- **Protection against explosions and fires:** No special measures required.

(Cont'd. on page 3)

Product name: LIQUID POWDER TRACING DYE BLUE

(Cont'd. from page 2)

- **Special Sensitivity:** KEEP FROM FREEZING.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
 - **Requirements for storerooms and containers:** Store only in the original receptacle.
 - **Further information about storage conditions:**
 - Protect from frost.
 - Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Technical systems:**
 - Facilities using this material should be equipped with an eye wash station and a safety shower.
- **Control parameters**
 - **Components with limit values that require monitoring at the workplace:**
 - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
 - **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
 - **Personal protective equipment:**
 - **General protective and hygienic measures:**
 - The usual precautionary measures for handling chemicals should be followed.
 - Product is a concentrated colorant and can stain skin and/or various articles. The hazards of this product should be low under normal industrial and commercial use. Handle with care to minimize exposure.
 - **Breathing equipment:** Not required.
 - **Protection of hands:**
 - Use of gloves suggested; concentrated dye/pigment products may stain skin if directly contacted.
 - **Glove Material** No specified glove material; most liquid-impervious protective gloves will suffice.
 - **Eye protection:** General eye protection suggested when handling any chemical product.
 - **Body protection:** Protective work clothing

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

- **Appearance:**
 - **Form:** Liquid
 - **Color:** Dark blue
 - **Odor:** Odorless
 - **Odour threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**
 - **Melting point/Melting range:** Undetermined.
 - **Boiling point/Boiling range:** 95 °C (203 °F)
- **Flash point:** Not applicable.

(Cont'd. on page 4)

Product name: LIQUID POWDER TRACING DYE BLUE

(Cont'd. from page 3)

· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapor pressure:	Not determined.
· Density at 20 °C (68 °F):	1.16 g/cm ³ (9.68 lbs/gal)
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Soluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** Avoid contact with strong oxidizing agents.
- **Hazardous decomposition products:**
 - In the case of a fire, oxides of carbon, fumes, and smoke may be produced.

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**
 - **LD/LC50 values that are relevant for classification:**
 - Product has not been tested.
 - Based on the known information of the ingredients, product is expected to have a low level of acute oral toxicity. (Oral LD50 >2,000 mg/kg)
 - **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** No irritating effect.
 - **Sensitization:** No sensitizing effects known.
 - **Additional toxicological information:**
 - The product is not subject to classification according to internally approved calculation methods for preparations.
 - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

(Cont'd. on page 5)

Product name: LIQUID POWDER TRACING DYE BLUE

(Cont'd. from page 4)

Carcinogenic categories:

IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability: The product is biodegradable after prolonged adaptation.

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Additional ecological information:

Other adverse effects: No further relevant information available.

13 Disposal considerations

Waste treatment methods:

Recommendation: Must be specially treated adhering to official regulations.

Uncleaned packagings:

Recommendation: Packaging can be reused or recycled after cleaning.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

UN-Number

DOT, ADR, ADN, IMDG, IATA Void

UN proper shipping name

DOT, ADR, ADN, IMDG, IATA Void

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class Void

Packing group

DOT, ADR, IMDG, IATA Void

Environmental hazards: Not applicable.

Special precautions for user: Not applicable.

UN "Model Regulation": -

Product name: LIQUID POWDER TRACING DYE BLUE

(Contd. from page 5)

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Proposition 65

Chemicals known to cause cancer: No known Proposition 65 substances.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

GHS label elements Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

16 Other information

The data in this Material Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process. This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of the manufacturer/supplier. The data on this sheet are related only to the specific material designated herein, and the information available for all ingredients at the time of creation. Manufacturer/supplier assumes no responsibility for use or reliance upon these data. Any information that is withheld herein (such as exact chemical identity or exact concentration) has been reserved as a trade secret as per applicable regulations.

IDEP APPENDIX
EGLE Spill or Release Report



SPILL OR RELEASE REPORT

NOTE: Some State and Federal regulations require a specific form to use and procedures to follow when reporting a release. Those forms and procedures MUST be used and followed if reporting under those regulations. Please refer to the Michigan Reporting Requirements Tool to aid you in determining the proper form to use. This report form, although not required to be used, is designed to aid person to report releases under regulations. To report a release, some regulations require a facility to call the EGLE PEAS Hotline at 800-292-4706 (or the EGLE District Office that oversees the county where it occurred) and other agencies and provide information that is included in this form. This form may also be used for the written follow-up report to the department. If you prefer to submit this report electronically by FAX or e-mail, contact the regulating agency for the correct telephone number or e-mail address. Go to www.michigan.gov/chemrelease for more information.

Please print or type all information.

Name of Person Submitting Written Report		Title of Person Submitting Written Report		Telephone Number (provide area code)	
Name of Business			Release Location (Provide address if different than business, if known, and give directions to the spill location. Include nearest highway, town, road intersection, etc.)		
Street Address					
City	State	ZIP			
Business Telephone Number (provide area code)					
Site Identification Number and Other Identifying Numbers (if applicable)		County	Township	Tier/Range/Section (if known)	

Release Data: Complete all applicable categories. Check all the boxes that apply to the release. Provide the best available information regarding the release and its impacts. Attach additional pages if necessary.

Date of Release (if known)	Date of Discovery	Duration of Release (if known)	Type of Incident		
			<input type="checkbox"/> Explosion <input type="checkbox"/> Loading/unloading release <input type="checkbox"/> Fire <input type="checkbox"/> Pipe/valve leak or rupture <input type="checkbox"/> Leaking container <input type="checkbox"/> Vehicle accident <input type="checkbox"/> Other		
Time of Release (if known)	Time of Discovery	<input type="checkbox"/> days <input type="checkbox"/> hours <input type="checkbox"/> minutes	<input type="checkbox"/> Other <input type="text"/>		
Material Released (chemical or trade name) <input type="checkbox"/> Check here if additional materials listed on the attached page		CAS Number or Hazardous Waste Code	Estimated Quantity Released (indicate unit e.g. lbs, gals, cu ft or yds)	Physical State Released (indicate if solid, liquid, or gas)	

Factors Contributing to Release		Source of Loss	
<input type="checkbox"/> Equipment failure <input type="checkbox"/> Operator error <input type="checkbox"/> Faulty process design		<input type="checkbox"/> Container <input type="checkbox"/> Railroad car <input type="checkbox"/> Pipeline <input type="checkbox"/> Ship	
<input type="checkbox"/> Training deficiencies <input type="checkbox"/> Unusual weather conditions <input type="checkbox"/> Other		<input type="checkbox"/> Tanker <input type="checkbox"/> Tank <input type="checkbox"/> Truck <input type="checkbox"/> Other	
<input type="checkbox"/> _____		<input type="checkbox"/> _____	
Type of Material Released	Material Listed on or Defined by	Immediate Actions Taken	
<input type="checkbox"/> Agricultural: manure, pesticide, fertilizer <input type="checkbox"/> Chemicals <input type="checkbox"/> Flammable or combustible liquid <input type="checkbox"/> Hazardous waste <input type="checkbox"/> Liquid industrial waste <input type="checkbox"/> Oil/petroleum products or waste <input type="checkbox"/> Salt <input type="checkbox"/> Sewage <input type="checkbox"/> Unknown <input type="checkbox"/> Other	<input type="checkbox"/> CAA Section 112(r) list (40 CFR Part 68) <input type="checkbox"/> CERCLA Table 302.4 (40 CFR Part 302) <input type="checkbox"/> EPCRA Extremely Hazardous Substance (40 CFR Part 355) <input type="checkbox"/> NREPA Part 31, Part 5 Rules polluting material <input type="checkbox"/> NREPA Part 111 or RCRA hazardous waste <input type="checkbox"/> NREPA Part 121 liquid industrial waste <input type="checkbox"/> Unknown <input type="checkbox"/> Other	<input type="checkbox"/> Containment <input type="checkbox"/> Diversion of release to treatment <input type="checkbox"/> Dilution <input type="checkbox"/> Evacuation <input type="checkbox"/> Decontamination of persons or equipment <input type="checkbox"/> Hazard removal <input type="checkbox"/> Neutralization <input type="checkbox"/> Monitoring <input type="checkbox"/> System shut down <input type="checkbox"/> Other	
<input type="checkbox"/> _____	<input type="checkbox"/> _____	<input type="checkbox"/> _____	
Release Reached			
<input type="checkbox"/> Surface waters (include name of river, lake, drain involved) _____			
<input type="checkbox"/> Distance from spill location to surface water, in feet _____			
<input type="checkbox"/> Drain connected to sanitary sewer (include name of wastewater treatment plant and/or street drain, if known) _____			
<input type="checkbox"/> Drain connected to storm sewer (include name of drain or water body it discharges into, if known) _____			
<input type="checkbox"/> Groundwater:			
Is it a known or suspected drinking water source? Yes <input type="checkbox"/> No <input type="checkbox"/>			
What is the name of aquifer, if known? _____			
<input type="checkbox"/> Soils (include type e.g. clay, sand, loam, etc.) _____			
<input type="checkbox"/> Ambient Air			
<input type="checkbox"/> Spill contained on impervious surface			
Extent of Injuries(if any)	Was Anyone Hospitalized?	Number of Injuries Treated Onsite:	
	<input type="checkbox"/> Yes Number Hospitalized: <input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/> No	<input type="checkbox"/>	

Describe the incident, the type of equipment involved in the release, how the volume of loss was determined, along with any resulting environmental damage caused by the release. Identify who immediately responded to the incident (own employees or contractor — include cleanup company name, contact person, and telephone number). Also identify who did further cleanup activities if performed or known when report submitted.

Check here if description or additional comments are included on attached page

Estimated quantity of any recovered materials and a description of how those materials were managed (include disposal method if applicable)

Check here if description or additional comments are included on attached page

Assessment of actual or potential hazards to human health (Include known acute or immediate and chronic or delayed effects, and where appropriate, advice regarding medical attention necessary for exposed individuals.)

Check here if description or additional comments are included on attached page

Michigan Department of Environment, Great Lakes, and Energy Notified

Initial Contact by: Phone FAX
 Email Other

Date of Initial Contact

Time of Initial Contact

All EGLE Staff Contacted Telephone Number

All EGLE Staff Contacted	Telephone Number

Name of Person Making Initial Report

Title of Person Making Initial Report

Contact made by calling EGLE Pollution Emergency Alerting System (PEAS):
800-292-4706

Log Number Assigned

EGLE District or Field Office:

- Bay City Cadillac Calumet
- Crystal Falls Detroit Gaylord
- Grand Rapids Jackson Kalamazoo
- Lansing Marquette Newberry
- Warren

Note: EGLE Office locations are subject to change

Divisions or Offices Contacted

- Air Quality Division
- Drinking Water and Environmental Health Division
- Environmental Support Division
- Materials Management Division
- Office of Climate and Energy
- Office of the Clean Water Public Advocate
- Office of the Environmental Justice Public Advocate
- Office of the Great Lakes
- Oil, Gas, and Minerals Division
- Remediation and Redevelopment Division
- Water Resources Division

Other Entities Notified

Date: Time:

- | | | |
|---|----------------------|----------------------|
| <input type="checkbox"/> National Response Center (NRC): 800-424-8802 | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> US Coast Guard Office: | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Detroit <input type="checkbox"/> Grand Haven <input type="checkbox"/> Sault Ste. Marie | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> US Department of Transportation | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> US Environmental Protection Agency | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> 911 (or primary public safety answering point) | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Local Fire Department | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Local Police/State Police/Sheriff Dept | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Local Emergency Planning Committee | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> State Emergency Response Commission via MI SARA Title III Pgm | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Wastewater Treatment Plant Authority | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Hazmat Team | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Local Health Department | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> MIOSHA | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Bureau of Fire Services Fire Marshal Division | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> MI Dept of Agriculture & Rural Development: 800-405-0101 | <input type="text"/> | <input type="text"/> |
| <input type="checkbox"/> Other | <input type="text"/> | <input type="text"/> |

Person Contacted:

Telephone Number:

Date Written Report Submitted

Signature of Person Submitting Written Report

For information or assistance on this publication, please contact the Environmental Support Division, through EGLE Environmental Assistance Center at 800-662-9278. This publication is available in alternative formats upon request.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.

IDEP APPENDIX

IDEP Forms

*In 2022 the City of Kalamazoo will be fully switching over to Lucity asset management software for all IDEP Tracking documentation and Forms

WZJZ001 See Details	See WZJZ001 See Details	See Allocation 1/1/2020
Inspector Code 0000	Product or Type A - 0000	<input type="checkbox"/> Material Receipt
Inspected By 000000	Start Inspection Date 00/00/00	

Inspector ID 00	Inspector Code 00	Inspector Name 000000
---------------------------	-----------------------------	---------------------------------

Inspector Name per WZJZ	File No 00 00000000	Retrol Code
--------------------------------	-------------------------------	--------------------

Code Location	Code	Code Date
----------------------	-------------	------------------

Code Location	Code	Code Date
----------------------	-------------	------------------

Weekly Count	Weekly
---------------------	---------------

Product Location	Product
-------------------------	----------------

Product Location	Product	Product Date
-------------------------	----------------	---------------------

Warehouse Location	Warehouse	Warehouse Date
---------------------------	------------------	-----------------------

Warehouse Location	Warehouse	Warehouse Date
---------------------------	------------------	-----------------------

General Comments
Inspection of product performed on 01/01/2020.

Discharge Analysis

Disposal ID: _____
 Discharge Source: _____
 Sample Date: _____ Sample Time: _____ Inspected By: _____

DISCHARGE CHARACTERISTICS

Field Analysis (Required for Every Sample)

Temperature Value (degrees Celsius)	pH Value
_____	_____
Specific Conductivity (Microhm)	Oil Total Dissolved Solids (ppm)
_____	_____
Total Chloride (ppm)	Phenols (mg/L)
_____	_____

LABORATORY ANALYSIS

Only required for Fluoride, Phosphorus, Surfactant. Record result and place Laboratory Analysis Reports in appropriate cup(s) in.

Chlor M (mg/L) _____

Fluoride (mg/L)	Total Phosphorus (µg/L)
_____	_____
<input type="checkbox"/> Surfactants Report Attached	B-Cod Value *

* mandatory for all suspected discharges of human sewage origin

LABORATORY ANALYSIS

Only required for Fluoride, Phosphorus, Surfactant. Record result and place Laboratory Analysis Reports in appropriate cup(s) in.

Chlor M (mg/L) _____

Fluoride (mg/L)	Total Phosphorus (µg/L)
_____	_____
<input type="checkbox"/> Surfactants Report Attached	B-Cod Value *

* mandatory for all suspected discharges of human sewage origin

<input type="checkbox"/> Nitrogen/Ammonium report attached	<input type="checkbox"/> Phosrus report attached
<input type="checkbox"/> Toxicity report attached	<input type="checkbox"/> Metals Report Attached
Other _____	

Note: If outlet is underground or not safe to access, obtain sample from first available upstream manhole using an in-line sampling device ("sampling stick").



**ILLCIT DISCHARGE ELIMINATION PLAN
CONTACT & CORRESPONDENCE FORM**

Outfall ID with Dry Weather Flow: _____

Inspector(s): _____ Date: _____

Contact/Correspondence (check type):

Phone Log (describe or attach separate log)

Contact: _____

Discussion: _____

Letters (attach)

Notification of Inspection/Testing Schedule

Notification of Inspection Follow-up Results/Necessary Corrective Actions

Notification of Illicit Connection Elimination Confirmation Inspection Schedule

Notification of Compliance/Appreciation

Notification of Non-Compliance/Legal Procedures

Other (Describe): _____

Owner/Operator: _____

Address: _____

City: _____ Zip Code: _____

Regarding Business: _____

Address: _____

City: _____ Zip Code: _____



CHEMICAL RELEASE DOCUMENTATION INITIAL REPORT LOG

Date: _____ Time: _____

City Representative: _____

Reported by: Phone In Person E-mail

Person Reporting Incident

Name: _____ Title: _____

Address: _____ Organization: _____

Phone Number(s): _____

Location Information:

Chemical Release Location: _____

Chemical(s) (if known): _____

Description of Spill/Release: _____

Observation of Spill/Release: _____ (Date) _____ (Time)

Other notes: _____

Message Referral

Message referred to Kalamazoo Public Safety Central Dispatch (337-8994) to contact Haz-Mat Response Team:

by: _____ (City Representative) on: _____ (Date) at: _____ (Time)

Provide copy of log to Environmental Services, Harrison St. Facility

Phone Log Provided to Environmental Services by: _____ (signature)

Provided to: _____ on: _____ (Date) at: _____ (Time)

Provided by: Phone In Person E-mail



FACILITY INSPECTION FOR STORMWATER IDEP

Outfall ID: _____ Receiving Waters: _____

Date: _____ Time: _____ City Rep(s): _____

Facility Information

Facility Name: _____ Address: _____

Facility Contact: _____ Phone Number: _____

Discharge Sources

<u>Discharge Source</u>	<u>Sanitary (SS)</u>	<u>Storm (SW)</u>	<u>Comments</u>
<input type="checkbox"/> Catch Basin/Inlet	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Floor Drain	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Trench Drain	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Sump Pump Drain	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Foundation Drain	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Swimming Pool Sump Drain	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Roof Drains	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Laundry Tub	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Utility Sink	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Chemistry Lab Sink	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Restrooms	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Fire System Testing	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Containment Area	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Septic System	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Direct Discharge	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Oil Separator	<input type="checkbox"/> SS	<input type="checkbox"/> SW	_____
<input type="checkbox"/> Other:			_____

Operational Practices

<input type="checkbox"/> Wash-up operations at the end of a work shift or job activity	<input type="checkbox"/> SS	<input type="checkbox"/> SW
<input type="checkbox"/> Wash-down operation following irregular accidents and spills	<input type="checkbox"/> SS	<input type="checkbox"/> SW
<input type="checkbox"/> Vehicle maintenance and washing	<input type="checkbox"/> SS	<input type="checkbox"/> SW
<input type="checkbox"/> Outdoor washing practices	<input type="checkbox"/> SS	<input type="checkbox"/> SW
<input type="checkbox"/> Other	<input type="checkbox"/> SS	<input type="checkbox"/> SW

Known or Suspected Maintenance Problems

- Leaking tanks, pipes or fittings, etc.
- Sanitary sewer or septic system capacity limitation
- Other _____

General Comments



**ILLCIT DISCHARGE ELIMINATION PLAN
FACILITY STATUS FORM**

Outfall ID with Dry Weather Flow: _____

Date: _____ Time: _____ Inspector(s): _____

FACILITY INFORMATION

Name of Facility: _____ Address: _____

Facility Contact: _____ Phone Number: _____

ILLCIT DISCHARGE TESTING

Type of Test: Dye Smoke Other: _____

Test Results

- Proper Connection - The fixtures tested in this establishment have been found to be properly connected to the sanitary sewer system. No problems were noticed at time of inspection.
- Incomplete/unfinished (state reason): _____
- Unsuccessful attempt (state reason): _____
- Violation/Illicit Connection/Improper discharge:
 - Illicit Connection
 - Improper Discharge
 - Poor Housekeeping

List All Fixtures Tested: _____

Comments: _____



ILLICIT DISCHARGE ELIMINATION PLAN FIELD INVESTIGATION FORM

Outfall ID with Dry Weather Flow: _____

Date: _____ Time: _____ Inspector(s): _____

Upstream Manhole Reconnaissance

Start with immediate upstream manhole on primary storm main and work consecutively upstream.
Indicate manholes inspected on field map(s).

Manhole I.D.: _____ Dry Weather Flow? Yes No

If **yes**, continue to next up-gradient manhole.

If **no**, check field maps for connections within subject storm main segment between outfall and first upstream "dry" manhole. Proceed up-gradient manhole reconnaissance in each secondary storm main segment, repeating same procedure until the main segment contributing the flow is identified. List two manhole I.D.'s defining segment and indicate on field map.

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

Manhole I.D.: _____ Dry Weather Flow? Yes No

over



ILLICIT DISCHARGE ELIMINATION PLAN SOURCE INVESTIGATION FORM

Outfall ID with Dry Weather Flow: _____

Investigator(s): _____

List facilities/residences and associated addresses along storm main segment between
"wet" and "dry" manholes, starting with most downstream and proceeding upstream:

1. Name _____ Address: _____

2. Name _____ Address: _____

3. Name _____ Address: _____

4. Name _____ Address: _____

5. Name _____ Address: _____

6. Name _____ Address: _____

7. Name _____ Address: _____

8. Name _____ Address: _____

9. Name _____ Address: _____

10. Name _____ Address: _____

11. Name _____ Address: _____

12. Name _____ Address: _____

13. Name _____ Address: _____

14. Name _____ Address: _____

15. Name _____ Address: _____

16. Name _____ Address: _____

17. Name _____ Address: _____



**DISCHARGE TO STORM SEWER
FIELD INVESTIGATION FORM**

Storm Sewer Structure Entry Point ID: _____

Downstream Outfall ID: _____

Inspector(s): _____ Date: _____ Time: _____

Notification Details

Notification origin: _____ Date: _____ Time: _____

If Citizen: Name: _____

Address: _____ Phone: _____

Details of Complaint: _____

Observations

Observed Conditions: _____

Results

Action Taken: _____

Followup Needed: _____

Comments

Section 8: Attachment A

Soil Erosion and Sedimentation Control

Permit Application (For Part 91)



PERMIT APPLICATION (For Part 91)
SOIL EROSION AND
SEDIMENTATION CONTROL
 Community Planning and Economic Development
 245 N Rose Street, Ste 100
 Kalamazoo, MI 49007
 269-337-8026

OFFICE USE ONLY	
Permit Number	
Date Issued	
Expiration Date	

1. APPLICANT (Please check if applicant is the landowner or designated agent*)

Name <input type="checkbox"/> Landowner <input type="checkbox"/> Designated Agent			
Address			
City	State	Zip Code	Area Code/Telephone Number

2. LOCATION

Section	Town	Range	Township	City/Village	County
Subdivision	Lot No.	Tax ID Number	Street Address		

3. PROPOSED EARTH CHANGE

Project Type: <input type="checkbox"/> Residential <input type="checkbox"/> Multi-family <input type="checkbox"/> Commercial <input type="checkbox"/> Industrial <input type="checkbox"/> Land Balancing	
Describe Project	State of Earth Change (acres or square feet)
Name of and Distance to nearest Lake, Stream, or Drain	Date Project to Start Date Project to be Completed

4. SOIL EROSION AND SEDIMENTATION CONTROL PLAN (Refer to Rule 323.1703)

Note: ___ complete sets of plans must be attached.	Estimated Cost of Erosion and Sediment Control
Plan Preparer's Name and Telephone Number	Area Code ()

5. PARTIES RESPONSIBLE FOR EARTH CHANGE

Name of Landowner (if not provided in Box No. 1 above)		Address	
City	State	Zip	Area Code/Telephone Number
Name of individual "On Site" Responsible for Earth Change		Company Name	
Address:	City	State	Zip Code Area Code/Telephone Number

6. PERFORMANCE DEPOSIT (if required by the permitting agency)

Amount Required \$	<input type="checkbox"/> Cash <input type="checkbox"/> Certified Check <input type="checkbox"/> Irrevocable Letter of Credit <input type="checkbox"/> Surety Bond
Name of Surety Company	
Address:	City State Zip Code Area Code/Telephone Number

I (we) affirm that the above information is accurate and that I (we) will conduct the above described earth change in accordance with Part 91, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, applicable local ordinances, and the documents accompanying this application.

Landowner's Signature	Print Name	Date
Designated Agent's Signature*	Print Name	Date

*Designated agent must have a written statement from landowner authorizing him/her to secure a permit in the landowner's name.

Soil Erosion Sedimentation Control (SESC) Program Plan Evaluation Checklist

YOU MUST SUPPLY THE FOLLOWING DOCUMENTS AND INFORMATION

Project Name: _____

Reviewing Agency: _____

	SESC Plans	Comments:
1	<input type="checkbox"/> Scaled Drawing (< 200' = 1")	
2	<input type="checkbox"/> Legal Description	
3	<input type="checkbox"/> Site Location Sketch	
4	<input type="checkbox"/> Proximity to Lakes & Streams	
5	<input type="checkbox"/> Predominate Land Features	
6	<input type="checkbox"/> Contours/Slope	
7	<input type="checkbox"/> Soils	
8	<input type="checkbox"/> Limits of Earth Change	
9	<input type="checkbox"/> Drainage & Dewatering Facilities	
10	<input type="checkbox"/> Timing & Sequence of Earth Change	
11	<input type="checkbox"/> Temporary SESC Measures (location, install & removal info)	
12	<input type="checkbox"/> Permanent SESC Measures (location & install info)	
13	<input type="checkbox"/> Maintenance Program for Permanent SESC Measures	

Project Plan Evaluation Status

- Approved
- Not Approved (Provide Reason)

Reason: _____

SESC Plan Reviewer Name: _____ Date Reviewed: _____

Project Name/Landowner: _____

SESC Permit # _____

Anticipated Start Date: _____

Anticipated End Date: _____

Construction Sequence	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<i>Temporary SESC Measures Installed:</i>												
• Silt Fence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Rock Access Road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Erosion Control Blankets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Inlet protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Sediment Basins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Strip & Stockpile</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Rough Grading</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Building Construction</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Final Grade</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Permanent SESC Measures Installed:</i>												
• Sediment Basins	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Seeding/Mulch/Landscaping – Vegetation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Pavement/Rock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Removal of Temporary SESC Measures</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Briefly describe the maintenance plan (include responsible party) for each temporary and permanent SESC measure.

Measure	Responsible Party	Maintenance Plan
Silt Fence		
Buffer Strips		
Catch Basins/Inlets		
Street Sweeping		
Seeding/Mulch		
Storm Ponds/Sediment Basins		
Other:		

Section 8: Attachment B

Site Plan Review Forms



CITY OF KALAMAZOO – PRE-APPLICATION QUESTIONNAIRE

The Pre-Application Meeting is the first step in Site Plan Review. Please complete the following questionnaire about your project to be scheduled for a Pre-Application Meeting. We want to get you in a meeting as soon as we can, so to help us, please ensure that your questionnaire is answered completely, and submit any additional documents that may be useful to your site plan review.

If you have any questions, please call [269-377-8044](tel:269-377-8044) or email us at siteplan@kalamazoocty.org.

DOCUMENTS TO INCLUDE WITH THIS APPLICATION

- Concept Site Plan drawn to scale of site and any existing and proposed improvements.
- Use of property, building information, outside changes, surrounding land uses.
- Location of right of way, easements and utility locations, existing and proposed.
- Property owner contact information (*If applicant is not the owner of property*).
- Environmental reports associated with the project.
- Stormwater management plan if increasing impervious coverage on site.
- Any impact, closure or development within the right of way (*sidewalk, curb lawn or street*).

DEPOSIT & FEES

The pre-site plan application has no fee associated with it, the final site plan after this initial phase has a fee and can be found on the current City of Kalamazoo Fee Schedule. We want your project to be successful and up to code standards, and the Pre-Application Meeting allows you to meet and collaborate with the Site Plan Review Committee. The Site Plan Review Committee is a board made up of city staff members representing planning, zoning, water, water resources, sanitary, building inspection and the Fire Marshal.

COMPLETED APPLICATIONS

Once completed, please submit this application and all supplemental documentation to Planner I, Bobby Durkee, at siteplan@kalamazoocty.org. If you have any questions, please visit www.kalamazoocty.org/siteplanreview or call [269-377-8044](tel:269-377-8044). Only completed applications with a scaled site plan will be scheduled.

TYPICAL SITE PLAN PROCESS

Project Review (Optional) → Pre-Site Plan Review Meeting → (Public Board Approval if required) → Site Plan Review Meeting → Submit Revisions (if required) → Site Plan Approval

After a Pre-Application Meeting a site plan meeting will be scheduled in 3 to 4 weeks after a completed site plan review (separate application from this one) and site plan is accepted. A final site plan will not be scheduled if outside board (Zoning Board of Appeals, Planning Commission, etc.) are required for the proposed development. No Permits will be issued associated with the project until site plan approval is issued.



PRE-APPLICATION QUESTIONNAIRE

APPLICANT INFORMATION		
Name:		
Mailing Address:		
City:	State:	ZIP Code:
Date of Birth:		
Phone:	Email:	Preferred Contact: <input type="checkbox"/> Email <input type="checkbox"/> Phone
SITE INFORMATION		
Address:		
Status of the Property: <input type="checkbox"/> Owner <input type="checkbox"/> Lessee <input type="checkbox"/> Option or Purchase Agreement <input type="checkbox"/> Other: _____		
Current Zoning: _____ <i>If you do not know, please use our City of Kalamazoo GIS Tool to search for your property</i> https://gis.kalamazoocty.org/Html5Viewer/index.html?viewer=City_of_Kalamazoo.Kalamazoo_City		
Does the site reside in a district and/or special designation?		
<input type="checkbox"/> Historic District <input type="checkbox"/> Brownfield Eligible <input type="checkbox"/> Tax Capture or Deferment Area? (such as CIA, TIF, NEZ)		
<input type="checkbox"/> Natural Features Protection – 2025 Master Plan <input type="checkbox"/> Wellhead Protection Area		
Do you have environmental reports? <input type="checkbox"/> Yes <input type="checkbox"/> No		
How many fire hydrants are on site or within 300 ft:	Will the building be sprinkled: <input type="checkbox"/> Yes <input type="checkbox"/> No	
PROJECT DETAILS		
Project Type: <input type="checkbox"/> Residential <input type="checkbox"/> Commercial <input type="checkbox"/> Retail <input type="checkbox"/> Industrial <input type="checkbox"/> Mixed-Use		
Please describe your project in a way to someone who knows nothing about your plan:		

What physical site improvements are within your project plan (i.e. buildings, lights, paving, site clearing, landscaping, etc.)		

What utilities are on site? Will any new utilities be added? If so, could you please describe:		

Complete in Full, Incomplete applications will not be accepted



CITY OF KALAMAZOO – SITE PLAN APPLICATION & CHECKLIST

Site Plan Review is an administrative process through the Site Plan Review Committee. The Committee is comprised of members of many City Departments, including Public Safety, Public Services, Building and Trades, Community Planning and Economic Development (CPED).

The first step in Site Plan Review, is the Pre-Application meeting. If you have not yet scheduled this meeting, please contact us at [269-377-8044](tel:269-377-8044) or email us at siteplan@kalamazoocty.org. The Pre-Application meeting allows applicants to ask questions about their plan, the process, this checklist as it relates to their project, or to finalize an application with staff. Staff contact for Site Plan Review is Bobby Durkee and may be reached at above listed number or durkeer@kalamazoocty.org

All Site Plans must be developed using this checklist. You will use this checklist as your cover page to your Site Plan. Using this checklist, provide all information pertinent to the project and note on which plan page the information can be found. Assistance and questions with this form or the process can be answered by CPED staff at any point during the process.

SITE PLAN REVIEW REQUIREMENTS

- Drawn at an engineering scale of between 1"=50' or 1"=20' with a north arrow
- Name, address, email, phone number of property owners, applicant, and firms/professionals involved in the project. *Verify property address with City Assessor's Office*
- Address, legal description, and Parcel Identification Number (PIN) of subject property.
- All plans must be submitted in an **electronic format (PDF) plus one hard copy in 11"x17" format, one physical copy of application and supporting document required.**
- Supporting documents such as surveys, environmental reports, stormwater worksheets and stormwater agreements if required.
- Application is not complete until the application completed in full and fee are submitted.

DEPOSIT & FEES

You can find a copy of our fee schedule here: <https://www.kalamazoocty.org/cpdfeeschedule/file>

COMPLETED APPLICATIONS

Once completed, please submit this checklist and your completed site plan in PDF format to siteplan@kalamazoocty.org. If you have any questions, please visit www.kalamazoocty.org/siteplanreview or call [269-377-8044](tel:269-377-8044). Only completed applications following all Site Plan Review requirements will be accepted.



SITE PLAN REVIEW CHECKLIST

APPLICANT INFORMATION		
Applicant Name:		
Applicant Mailing Address:		
Applicant City:	Applicant State:	Applicant ZIP Code:
Applicant Phone:	Preferred Contact: <input type="checkbox"/> Email <input type="checkbox"/> Phone	
Applicant Email:		
PROPERTY OWNER INFORMATION		
Owner Name:		
Owner Mailing Address:		
Owner City:	Owner State:	Owner ZIP Code:
Owner Phone:	Preferred Contact: <input type="checkbox"/> Email <input type="checkbox"/> Phone	
Owner Email:		
PROPERTY INFORMATION		
Property Address:		
Parcel Identification Number (PIN):		
EXISTING CONDITIONS: All projects should provide information related to the site's existing conditions. Projects involving no new construction of buildings or additions less than 1,500 square feet and those not increasing a site's impervious coverage more than 10%, do not need to include a topographic site survey.		
Site Plan Review Checklist Item		Site Plan: Found on Page
Vicinity Maps illustrating adjacent streets and existing structures (within 200'), zoning, land use, and 2025 Master Plan Land Development designation of adjacent parcels.		
Note presence of special district or designation such as:		
➤ Historic District		
➤ Brownfield Redevelopment Authority		
➤ State/Federal List for Soil/Groundwater Contamination – If yes, also contact MEGLE		
➤ Endangered/rare species/habitat area -if yes, also contact MDNR		
➤ Required reporting for RCRA/US EPA Hazardous Waste Handler site (note site type: small quantity generator, large quantity generator, transporter, treatment/storage/disposal, notifier, other)		
➤ Solid Waste Facility		
➤ Baseline Environmental Assessment (BEA)		
➤ Tax capture or deferment area (such as CIA, TIF, NEZ, etc.)		
➤ Natural Features Protection – 2025 Master Plan		
➤ Wellhead Protection Area		



SITE PLAN REVIEW CHECKLIST *COMPLETE IN FULL, ITEMS THAT DON'T APPLY MARK 'N/A' AND NOTE WHY

EXISTING CONDITIONS: All projects should provide information related to the site's existing conditions. Projects involving no new construction of buildings or additions less than 1,500 square feet and those not increasing a site's impervious coverage more than 10%, do not need to include a topographic site survey.	
Site Plan Review Checklist Item	Site Plan Found on Page
Location and type of existing features on the subject property and on adjacent properties, such as woods, wetlands, streams, rivers, lake, drains, 100-year flood plains, floodway, wetland, soil contamination, groundwater contamination etc. Also required are:	
➤ Topography (2' contour lines labeled with USGS datum)	
➤ Tree Inventory (note all trees 10" or greater at diameter breast height or dbh on the site with species type, condition, and remain/ remove status)	
If project disturbs an area greater than 1 acre within 500' of a lake or stream, EGLE permit req'd.	
Location, dimensions, and/or capacities of existing property lines; lots; recorded and unrecorded easements (including County drains); all utilities, including water, sewer, electric, gas, phone, cable, Internet, etc.; wells and cisterns, hydrants; Fire Department Connections; rights-of-way (including sidewalk, trails, landscaping, lighting, pavement, notes on vacation, etc. within it); and points of access	
Location of existing buildings and structures (such as signs, light fixtures, refuse areas, parking areas; fences, drainage, above/underground storage tanks; Fire Department Connection, fire service with backflow prevention type etc.) on the subject property, including setbacks, structure use, if planned to remain or be demolished, and age of structure if to remain.	
PROPOSED SITE PLAN: The following is the checklist of plan details and documentation required for the proposed site plan. Provide all information relevant to project. Please check with the Senior Development Planner if you are unclear on any provision prior to making application.	
PLANNING & ZONING ITEMS:	
Alignment with 2025 Master Plan	
Building location, including distance from property lines and	
Building elevations, including number of stories and locating doors windows, facade materials; signage, and lighting	
Off-street parking (vehicle and bicycle) & loading, including location, barrier-free, quantity, dimensions, signage	
All on-site lighting, including location, height, type, wattage	
Signage - type, location, and size	
Site Access for All Modes (vehicle, pedestrian, bicycle, transit) including location, dimension, radii, materials, signage	
Impervious surface, pre and post construction	
Refuse location & screening	
Landscape Plan, including fences, walls, plant schedule (number, size, species), and incorporate of existing trees and vegetation	



SITE PLAN REVIEW CHECKLIST – COMPLETE IN FULL, ITEMS THAT DON'T APPLY MARK 'N/A' AND NOTE WHY.

PROPOSED SITE PLAN: The following is the checklist of plan details and documentation required for the proposed site plan. Provide all information relevant to project. Please check with the Senior Development Planner if you are unclear on any provision prior to making application.	
BUILDING & TRADES	
Soil erosion control measures	
Final site grading/topography (2' contour lines labeled with USGS datum)	
USGS first floor elevation of buildings	
Locations, dimensions, area, use and construction type of all buildings	
ADA accessible routes	
Occupant egress path from all structures	
KDPS – FIRE MARSHALL	
Installation of Knox Box	
Proper location & sizing of:	
➤ Fire Department Connection (FDC)	
➤ FDC Signage	
➤ Hydrants	
➤ Water mains serving fire protection systems	
➤ Building identification (street number & name)	
Protective bollards:	
Vehicular access & circulation	
On-site Storage or Use of Hazardous Chemicals. *Permit from Fire Marshall may be required*	
➤ SDS information	
➤ Right to Know Survey/Chemical Inventory Storage Form Part I	
➤ Wellhead Protection/Chemical Inventory Storage Form Part II	
➤ Classify hazard class of site and/or structure(s)	
PUBLIC SERVICES – TRANSPORTATION & UTILITIES	
Location and dimensions of new rights-of-way	
Site access for all modes (vehicle, pedestrian, bicycle, transit) including location, approach type, dimension, radii, materials, signage	
Access & circulation of site or proposed street network	
Improvements to existing off-site rights-of-way for all modes (vehicle, pedestrian, bicycle, transit)	
Timeline of proposed right of way work, street closures, lane restrictions or sidewalk closures.	
Location and dimension of proposed traffic control measures, including acceleration, deceleration, and passing lanes, traffic signals or signs, etc.	
Location and dimension of utilities & easements for gas, electric, phone, cable, etc.	



SITE PLAN REVIEW CHECKLIST—COMPLETE IN FULL, ITEMS THAT DON'T APPLY MARK 'NA' AND NOTE WHY.

PROPOSED SITE PLAN: The following is the checklist of plan details and documentation required for the proposed site plan. Provide all information relevant to project. Please check with the Senior Development Planner if you are unclear on any provision prior to making application.	
Public Services - Environmental/Wellhead Protection	
Wellhead Protection Area (WHPA)	
➤ Stormwater Compliance with Performance Standards	
➤ Groundwater Infiltration Compliance	
Manufactured Treatment Device Worksheet	
Hazardous Material Storage present? If yes, complete Hazard Material Storage Forms 1 & 2	
Management of abandoned wells, cisterns, and above or underground storage tanks, including information on installation, operation, capping, or removing	
Installation of new well (temporary or permanent) with or without a Reduced Principle Backflow Prevention Assembly.	
Soil contamination present? If yes, MEGLE approval required for proposed stormwater infiltration.	
Property/site drains present? Detail connection to sanitary or storm sewer, on-site holding tank with pumping/disposal plan, or other.	
Detail direct or indirect discharge into or toward a storm sewer, drain, wetland, pond, lagoon, or other surface water feature?	
Detail all grade changes, cutting, and fill, including management of existing vegetation and soil erosion and/or sedimentation.	
Public Services – Stormwater Management	
Stormwater structures and systems, including size of development area (small 1/2 acre or less, medium 1/2 to 1 acre, and large 1+ acres)	
If there is any change (increase or decrease), complete:	
➤ Uniform Standard 1: Water Quality Treatment Volume Work sheet	
➤ Uniform Standard 2: Chanel Protection Volume Worksheet	
Geothermal Wells on the property.	
Site Discharge Calculation Worksheet Property buffer water features on adjacent properties if site is to discharge into a County drain and/or is adjacent to an MDOT street, please contact appropriate authority for more information, additional standards, and permitting	
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PROPOSED SITE PLAN: The following is the checklist of plan details and documentation required for the proposed site plan. Provide all information relevant to project. Please check with the Senior Development Planner if you are unclear on any provision prior to making application.

Public Services - Water:	
Location & capacity of water main, water service, and hydrants:	
➤ For new water service also detail:	
➤ Size of line required	
➤ Use for fire service	
➤ Domestic meter size required	
➤ Irrigation meter size required	
➤ For new public water mains:	
➤ Located in public right-of-way -or-	
➤ Located in easement dedicated to CDK	
➤ MDEQ PA399 Permit Application	
Quantity of new hydrants _____	
Fire Service (note: existing systems may require inspection & upgrade)	
➤ Locate cross-connections	
➤ Backflow prevention devices	
Public Services – Sanitary Sewer	
Sanitary sewer service lateral location and sizing	
➤ All existing & proposed new, including identification & depth of	
➤ underground utility crossings	
Invert elevation of existing lateral at ROW/easement lines which will continue to be active	
Invert Elevation of proposed new lateral at ROW/easement line	
Sanitary main I.S. invert elevation	
Sanitary main D.S. invert elevation	
Compliance with Chapter 28 of the City of Kalamazoo Ordinances & Engineering Best Practices	
Discharge Basis of Design Flow Rate, per connection: (Residential – Multi-Family 3+; Commercial – Restaurant, Laundry Facility, Manufacturing, Hotel/Motel, Medical, and others as required)	
➤ Contribution Per REU: (gpd)	
➤ Total REU's with justification/calculation	
➤ Average Flow Rate(gpm)	
➤ Peaking Factor with justification/calculation	
➤ Peak Flow Rate(gpm)	
If a new connection is proposed, a Sanitary Sewer Connection Application Form is required	



SITE PLAN REVIEW CHECKLIST - COMPLETE IN FULL, ITEMS THAT DON'T APPLY MARK 'NA' AND NOTE WHY.

PROPOSED SITE PLAN: The following is the checklist of plan details and documentation required for the proposed site plan. Provide all information relevant to project. Please check with the Senior Development Planner if you are unclear on any provision prior to making application.	
Summary of Site Calculations	
Gross site area	
Area of site covered with impervious and semi-pervious surfaces	
Number and type of housing units	
Square footage of commercial, manufacturing, or institutional uses - site total and by floor area per building	
Number of vehicle & bicycle parking spaces provided, including barrier-free	
Number of trees (at or greater than 10" dbh) saved and/or removed with proposed plan, including species type, size, and health	
Estimated number of vehicle trips per day generated by the proposed use (refer to ITE trip generation)	
If generating more than 1,000 vehicle trips/day are generated, a complete traffic impact analysis	
Light grid/illumination plan, if required.	
If requiring 20 or more parking spaces or impervious surface greater than 6,000 square feet, complete the following:	
➤ Water Quality Treatment Volume worksheet	
➤ Chanel Protection Volume Worksheet	
Calculations for proposed sewer main, sewer lead, water main, water service, and hydrants.	

Description of Project:

Applicant name & Signature

Date:

SITE PLAN REVIEW RESOURCES

- [Zoning Ordinance](#)
- [2025 Master Plan](#)
- [2015 Michigan Building Code](#)
- [2015 Michigan Residential Code](#)
- [2015 Michigan Mechanical Code](#)
- [2015 Michigan Plumbing Code](#)
- [ADA - ICC A117.1-2009](#)
- [Chapter 28, Kalamazoo Code of Ordinances, as Amended, as Amended](#)
- [Soil Erosion and Sedimentation Control - Chapter 30, Kalamazoo Ordinances, as Amended](#)
- [Flood Plain Management - Chapter 29 City of Kalamazoo Ordinances, as Amended](#)
- [Chapter 38 of the City of Kalamazoo's Code of Ordinances, as Amended](#)
- [MMUTCO](#)
- [NACTO](#)
- Complete Streets Policy, City of Kalamazoo
- ITE Trip Generation
- MDEQ - Uniform Stormwater Standards 1-4
- [Title 40 of the Code of Federal Regulations \(CFR\) as Amended, US EPA](#)
- [Natural Resources and Environmental Protection Act \(NREPA\), Act 451 of 1994 Part 41, as Amended Recommended Standards for Wastewater Facilities, Current Addition \(10 States Standards\)](#)
- [Standard Construction Specifications for Wastewater, City of Kalamazoo, Current addition](#)
- Wellhead Protection Zoning Overlay - Chapter 3, Section 3.5, Ordinance No. 1825 as Appendix A
- Performance Standards for Groundwater Protection Within Wellhead Protection Capture Zones and Stormwater Quality Management - Ordinance No. 1826 as Appendix A, Chapter 8, Section B.3
- [Phase II Stormwater NPDES Permit](#)
- <https://kalamazoopublisafety.org/fire/marshall>
- [Maker of Acceptable Knox Box \(www.knoxbox.com\)](#)
- [USEPA Safe Drinking Water Act, 42 U.S.C. §300f et seq. \(1974\)](#)
- MDEQ, Michigan Safe Drinking water Act 1976 PA 399, as Amended
- Recommended Standards for Water Works, Current Addition (10 States Standards)
- [City of Kalamazoo's Standard Specifications for Water Main and Service Installation, Current Edition](#)
- www.protectyourwater.net



CHEMICAL INVENTORY AND STORAGE FORM PART 1

KALAMAZOO DEPARTMENT OF PUBLIC SAFETY RIGHT TO KNOW QUESTIONNAIRE

DATE COMPLETED:			
NAME OF PREMISES:			
SITE ADDRESS:			
SITE TELEPHONE:			
EMERGENCY TELEPHONE:	(Numbers should be direct to facility representatives and available 24 hrs. Number should by-pass automated phone trees)		
QUESTIONNAIRE COMPLETED BY:			
PHONE:			
EMAIL ADDRESS:			
SITE USE: <small>Please check most appropriate box</small>	<input type="checkbox"/>	CHEMICAL USER (Chemicals used in activities on site)	
	<input type="checkbox"/>	CHEMICAL PRODUCER (Chemicals manufactured at this site, includes packaging)	
	<input type="checkbox"/>	OTHER (Chemicals are stored on site, but not used or produced. Such as service stations, retail stores, storage facility)	

Emergency Contacts: (Include Private Alarm / Security Companies, Maintenance Staff)				
NAME	TITLE	BUSINESS PHONE	HOME PHONE	CELL PHONE

EMERGENCY VENDORS	
SPILL CLEAN UP COMPANY	
ADDRESS:	
PHONE NUMBERS REGULAR and AFTER HOURS NUMBERS:	

**KALAMAZOO DEPARTMENT OF PUBLIC SAFETY
RIGHT TO KNOW QUESTIONNAIRE**

CHEMICAL TYPE SURVEY				
Check 1 Box for Each Category				
CHEMICAL TYPE	SPECIFIED QUANTITY	HAVE AT OR ABOVE SPECIFIED QUANTITY	HAVE BUT BELOW SPECIFIED QUANTITY	DO NOT HAVE
CLASS 1				
Explosives & Blasting Agents (Not including Class C Explosives)	Any Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 2				
Poison Gas	Any Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flammable Gas	100 gal. Water Capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Flammable Gas	100 gal. water capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 3				
Flammable Liquid	1000 gallons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Combustible Liquid	10,000 gallons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 4				
Flammable Solid (Dangerous when wet)	100 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flammable solid	500 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spontaneously Combustible Material	100 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 5				
Oxidizer	500 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organic Peroxide	250 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 6				
Poison	500 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irritating Material: Liquid	1000 gallons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irritating Material: Solid	500 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 7				
Radioactive Material (Yellow III Label)	Any Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 8				
Corrosives: Liquid	1000 gallons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corrosives: Solid	500 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NO DOT CATEGORY				
Known Human Carcinogen	Any Category	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The Michigan Occupational Safety and Health Act (MIOSHA) requires that the Department of Public Safety prepare and disseminate to our Officers a plan for executing the department's responsibilities with respect to each site within the City of Kalamazoo where hazardous chemicals are used or produced. There are no exemptions based on the quantity of chemicals at the site. The purpose of the act is to ensure firefighter safety.

KALAMAZOO DEPARTMENT OF PUBLIC SAFETY RIGHT TO KNOW QUESTIONNAIRE

HAZARDOUS CHEMICAL DEFINITIONS

Carcinogen – A chemical is considered to be a carcinogen if: 1) it has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen, or 2) it is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition), or 3) it is regulated by OSHA as a carcinogen.

Combustible liquid – Any liquid having a flashpoint at or above 100 degrees F (37.8 degrees C), but below 300 degrees F (93.3 degrees C), or higher, the total volume of which make up 99 percent or more of the volume of the mixture.

Corrosive (liquid and solid) – Any liquid or solid that causes visible destruction or irreversible damage to human skin tissue. Also, it may be a liquid that has a severe corrosion rate on steel.

Explosives and blasting agent (not including Class C explosives) – “Explosive” means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high pressure. “Blasting Agent” means a material designed for blasting. It must be insensitive that there is very little probability of: 1) accidental explosion, or 2) going from burning to detonation.

Flammable liquid – Any liquid having a flashpoint below 100 degrees F (37.8 C), except any mixture having components with flashpoints of 100 degrees F (37.8 C) or higher, the total of which makes up 99 percent or more of the total volume of the mixture.

Flammable gas – A gas that can burn with the evolution of heat and a flame. Flammable compressed gas is any compressed gas of which: 1) a mixture of 13 percent or less (by volume) with air is flammable, or 2) the flammable range with air is under 12 percent.

Flammable solid – A solid, other than a blasting agent, or explosive, that is liable to cause fire through friction, absorption or moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard.

Flammable solid (dangerous when wet) – Water Reactive Material (Solid) - Any solid substance (including sludges and pastes) which react with water by igniting or giving off dangerous quantities of flammable or toxic gases. (Sec.171.8)

Irritating material - liquid and solid - A liquid or solid substance which, upon contact with fire or air, gives off dangerous or intensely irritating fumes.

Non-flammable gas - Any compressed gas other than a flammable compressed gas.

Organic peroxide - An organic compound that contains the bivalent -O-O structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Oxidizer - A chemical that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases. Example being: chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily.

Poison (Less dangerous poisons, toxic) - substances, liquid or solids (including pastes and semi-solids) so toxic to man that they are a hazard to health during transportation.

Poison gas (Extremely dangerous poisons, highly toxic poisonous gases or liquids) - a very small amount of the gas, or vapor of the liquid, mixed with air is dangerous to life.

Radioactive material (yellow 111 label) - Any material, or combination of materials, that spontaneously gives off ionizing radiation.

Spontaneously combustible material (Solid) - A solid substance (including sludges and pastes) which may undergo spontaneous heating or self-burning under normal transportation conditions. These materials may increase in temperature and ignite when exposed to air.



CHEMICAL INVENTORY AND STORAGE FORM

PART 2

DRINKING WATER PROTECTION QUESTIONNAIRE

Please summarize the activities at this site, including principal products or services provided:

Please check the corresponding box if your facility has prepared any of the following:
<input type="checkbox"/> Pollution Incident Pollution Plan (PIPP)
<input type="checkbox"/> Risk Management Program/Plan (RMP)
<input type="checkbox"/> Spill Prevention Control and Countermeasures Plan (SPCC)
<input type="checkbox"/> Storm Water Pollution Prevention Plan (SWPPP)
<input type="checkbox"/> Hazardous Waste Contingency Plan (HWCP)
<input type="checkbox"/> Other Spill Contingency Plan, please explain.

Please check the corresponding box if your facility has prepared or is designated as any of the following:
<input type="checkbox"/> Listed as a Part 201 Site under Act 451
<input type="checkbox"/> Listed as a Part 213, Leaking Underground Storage Tank, Site under Act 451
<input type="checkbox"/> Baseline Environmental Assessment
<input type="checkbox"/> Due Care Plan
<input type="checkbox"/> Other known release of a regulated substance or ongoing contamination, please explain.

Kalamazoo's wellhead protection ordinance (No. 1825) defines the following as Regulated Substances:

1. Substances for which there is a materials safety data sheet (MSDS), and the MSDS cites possible health hazards
2. Hazardous Waste, as defined by the Resource Conservation and Recovery Act (RCRA) of 1976
3. Hazardous Substance, as defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
4. Radiological materials
5. Biohazards

EXAMPLES OF REGULATED SUBSTANCES INCLUDE

A. PETROLEUM PRODUCTS Examples: Gasoline, Motor Oil, Heating Oil, Diesel, Used Oil
B. RADIOLOGICAL MATERIALS Common Uses: Gas Chromatography, Scientific Research, Gauges, Manufacturing, Medicine
C. INORGANIC COMPOUNDS (Metals, Metal Compounds and certain Acids and Bases) Examples: Chromium, Arsenic, Cyanide, Nitrate, Hydrochloric Acid, Sodium Hydroxide
D. FERTILIZERS, PESTICIDES, AND OTHER SYNTHETIC ORGANIC COMPOUNDS Examples: 10-10-10, Ammonium nitrate, Atrazine, Carbofuran, Simazine, Bone Meal
E. VOLATILE ORGANIC COMPOUNDS (VOCs) Examples: Paints, Varnish, Solvents, Thinners, Adhesives,
F. SALT Examples: Calcium Chloride, Sodium Chloride, Sand/Salt Mixtures

Do you use or store regulated substances onsite?

Yes No

If you answered "no" to this question, you do not need to complete page 5 of the questionnaire.

DRINKING WATER PROTECTION QUESTIONNAIRE

Please check any boxes that describe the activities that occur at your property.

Commercial

- Analytical and clinical laboratories
- Animal feedlots
- Auto washes
- Boat builders/refinishers
- Car rental and service stations/automotive repair
- Commercial establishments with fleets of trucks and cars
- Concrete/asphalt/coal/tar companies
- Drum recycling and cleaning
- Dry cleaners and laundries
- Equipment repair
- Food processors/meat packers/slaughter houses
- Fuel oil distributors/stores
- Furniture stripping or refinishing
- Gas stations
- Junk and salvage yards
- Motor vehicle repair/service shops
- Pesticide application services/pesticide stores/retailers
- Petroleum bulk storage (wholesale)
- Photographic development
- Printing
- Salvage yards/impoundment lots
- Truck or rail tanker cleaning
- Wood preserving and treatment

Manufacturing

- Chemical, paint, and plastics manufacturing
- Furniture manufacturing
- Metal manufacturing (including metal plating)
- Mining operations/injection wells
- Other manufacturing (textiles, rubber, glass, etc.)
- Pulp and paper industry

Transportation

- Airport maintenance/fueling areas
- Governmental agencies with fleets of trucks and cars
- Salt piles/sand-salt piles
- Trucking/bus terminals
- Vehicle maintenance operations (transportation/trucking, contractors/construction, auto dealers)

Utilities

- Aboveground oil pipelines
- Electric power generation substations

Waste Disposal

- Landfills/dumps/transfer stations

If you store regulated substances onsite, please summarize the security measures at this site, including fencing, lighting, and flow valves (are they locked when not in use?):

DRINKING WATER PROTECTION QUESTIONNAIRE

REGULATED SUBSTANCES INVENTORY – INDOOR STORAGE AREAS

Our priority is to inventory materials stored in aggregate quantities greater than 55 gallons or 440 pounds. Aggregate quantity means the total storage amount of each material onsite, regardless of container size.

If your facility stores any regulated substances in INDOOR storage areas onsite, please list the specific types of materials below.

Material Name (Chemical or Brand)	Material Use	Container Type ¹	Container Material	Max. Quantity Stored Onsite (with Units)	Are floor drains present in storage area? If yes, are they connected to sanitary sewer, storm sewer, or other?		Containers properly labeled?	How often is the area inspected?	Are walls and floors impervious? Please list material.
					<input type="checkbox"/> Yes	<input type="checkbox"/> No			
<i>Example:</i> Hydraulic oil	Lubricant	Drum	Steel	55 Gallons	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Yes	Weekly	Yes, concrete
					<input type="checkbox"/> Yes	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> No			

¹ Examples: aboveground storage tank (AST), underground storage tank (UST), drum, bags, bottles, pails.

DRINKING WATER PROTECTION QUESTIONNAIRE

REGULATED SUBSTANCES INVENTORY – OUTDOOR STORAGE AREAS

Our priority is to inventory materials stored in aggregate quantities greater than 55 gallons or 440 pounds. Aggregate quantity means the total storage amount of each material onsite, regardless of container size.

If your facility stores any regulated substances in OUTDOOR storage areas onsite, please list the specific types of materials below.

Material Name (Chemical or Brand)	Material Use	Storage Container Type ¹	Storage Container Material	Max. Quantity Stored Onsite (with Units)	Secondary containment structure present? If yes, describe containment, including material and size.		How often is the area inspected?	Is the storage area covered?
					<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
<i>Example: Diesel</i>	Truck Fuel	AST	Steel	500 Gallons	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Concrete dike, 750 gallons	Weekly	Yes
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			

¹ Examples: aboveground storage tank (AST), underground storage tank (UST), drum, bags, bottles, pails.

Section 8: Attachment C

City of Kalamazoo Performance Standards for
Groundwater Protection within Wellhead Protection
Capture Zones and Stormwater Management



CITY OF KALAMAZOO
PERFORMANCE STANDARDS
FOR
GROUNDWATER PROTECTION WITHIN
WELLHEAD PROTECTION CAPTURE ZONES
AND
STORMWATER MANAGEMENT
(REFERENCE ORDINANCES NO. 1825 and No. 1826)

REVISED BY THE CITY OF KALAMAZOO
REVISION 2022

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1.0 INTRODUCTION

This document provides Performance Standards (Standards) for groundwater protection within Wellhead Protection Areas (Capture Zones) and stormwater management throughout the City of Kalamazoo, Michigan (City). The objective of this document is to define technical standards for groundwater and surface water (stormwater) protection during site development and redevelopment activities. These Standards are designed to be consistent with the objectives of the City's Wellhead Protection Program (WHPP) and to maintain compliance with the City's municipal separate storm sewer system (MS4) National Pollutant Discharge Elimination System (NPDES) Permit Certificate of Coverage and the federally mandated Total Maximum Daily Load for phosphorus reduction within the Kalamazoo River Watershed.

These Standards may be applied at all sites within the City but were developed primarily for use during Site Plan Review and/or Building Division plan review. These Standards supplement the City's Wellhead Protection Overlay Ordinance, the Stormwater System Ordinance (Chapter 29 of the City of Kalamazoo Code of Ordinances), and other associated City Ordinances associated with stormwater, wellhead protection and natural features protection.

The intent/purpose of the Wellhead Protection Overlay (WPO) Ordinance is to protect the groundwater supplies that serve as drinking water by: 1) defining *non-compatible land uses within Capture Zones*; 2) preventing their creation or establishment, including those that would prevent/limit the City's ability to obtain necessary well permits to replace or add new potable water production wells, and 3) minimizing the risk to drinking water sources posed by both approved and non-conforming land uses by requiring compliance with the Standards established in this document. The objectives of the Stormwater System Ordinance are to provide environmental protection to surface waters by regulating discharges into the City's stormwater system, and to provide the City with specific legal authority to find and eliminate illicit stormwater connections and discharges.

For the purpose of these Standards, the City's Capture Zones have been divided into three groundwater contamination risk areas based on groundwater's Time-of-Travel (TOT) to a municipal wellfield: 1-Year Capture Zone = Area located within a 1-Year Capture Zone to a municipal wellfield; 5-Year Capture Zone = Area located within a 5-Year Capture Zone, but outside the 1-Year Capture Zone to a municipal wellfield; and 10-Year Capture Zone = Area located within a 10-Year, but outside the 1-Year and 5-Year Capture Zones to a municipal wellfield. To determine if a site is located in a Capture Zone area, refer to Figure 1 and/or the City's online Geographic Information System (GIS) (<https://www.kalamazoo.org/maps>) under the Wellhead Capture Zones Layer.

In certain cases, more stringent standards have been developed for sites located closer to City wellheads. Consequently, proposed development of sites within the 1-Year Capture Zones is expected to implement

greater controls than that within the 5 or 10-Year Capture Zones.

This document includes a variety of Best Management Practices (BMPs) related to groundwater and surface water protection and are considered commonly accepted practices associated with groundwater and/or surface water protection. These BMPs were derived from a variety of sources, including "Low Impact Development Manual for Michigan - A Design Guide for Implementers and Reviewers" (SEMCOG, 2008), and "Michigan Nonpoint Source Best Management Practices Manual" (EGLE, 2017), and various state and federal rules, regulations, manuals, and guidance documents.

Maps showing the Capture Zones are maintained by the Water Programs Manager and the City Planner or their designee(s) and are available for viewing at the Department of Public Services, Water Resources Division, Water Programs Manager, 1415 North Harrison Street. Figure 1: Wellhead Protection Overlay (2022) is the official map reference of the WP-O and includes the 1-Year, 5-Year and 10-Year Time-of-Travel Capture Zones.

The Standards are divided into sections, which follow this Section 1.0 Introduction.

Section 2.0 "Groundwater Contamination Risk Assessment" discusses what risk category to groundwater (i.e., high or low risk) based on the Zoning Districts and various land use designations. Also, supporting rationale for the designations are provided.

Section 3.0 "General Plan and Construction Standards" details standard practices expected of any site, including those sites in possession of regulated substances (defined in the WP-O Ordinance).

Section 4.0 "Land-Use Specific Standards" includes more specific standards for several high-risk land uses that are prohibited in one or all of the Capture Zones.

Section 5.0 "Stormwater Management Requirements" establishes technical standards that apply for stormwater management both inside and outside the Capture Zones. These standards are intended to address groundwater vulnerability and land-use risks, prevent or minimize pollutant loadings to surface water to ensure compliance with the City's Stormwater NPDES Permit, and minimize potential adverse impacts to general surface water quality from stormwater runoff.

Section 6.0 "Treatment and Spill Containment" provides guidance regarding BMPs that can meet treatment requirements for stormwater quality and provides specific requirements, for spill containment cells and volumes, water quality swales, and proprietary systems.

Section 7.0 "Non-Conforming Land Uses" specifically addresses sites within the Capture Zones with existing non-conforming land uses pursuant to the WP-O Ordinance, including the requirement for the implementation of BMPs and/or Spill Contingency Plans (SCPs).

Section 8.0 "Potentially Applicable Environmental Regulations" discusses the requirement of developers to comply with all local, state, and federal regulations.

Section 9.0 "Contaminated Properties" addresses contaminated sites and special considerations and requirements for these sites.

2.0 GROUNDWATER CONTAMINATION RISK ASSESSMENT

A groundwater contamination risk assessment is required for all sites within Capture Zones. The assessment shall include a review of land uses allowed by the zoning ordinance and the proposed land use(s) with respect to the presumed risk to groundwater. The final risk designation shall be used to determine what land use Standards must be applied to protect groundwater as a condition of plan approval.

Land-use zoning districts are designated as either high-risk or low-risk for potential groundwater contamination, as shown in Table 1. Generally, high-risk designations were assigned to zoning districts that allow land use activities that are either prohibited or restricted within Capture Zones due to the potential for storage and/or use of regulated substances.

Table 1
Zoning Groundwater Risk Designations

<u>High-Risk Zoning Districts</u>	<u>Low-Risk Zoning Districts</u>
<u>Commercial (C) Districts</u> Mixed Use (CMU) Neighborhood (CN-2) Community (CO) Downtown 1 (D-1) Downtown 2 (D-2) Downtown 3 (D-3) Business, Technology, and Research (CBTR)	<u>Residential (R) District</u> Single-Dwelling (RS-4, RS-5, RS-7) Duplex (RD-8, RD-19) Multi-Dwelling (RM-15, RM-15C, RM-24, RM-36) Mobile Home Park (RMHP) Planned Unit Developments (PUD) Mixed Use (RMU)
<u>Manufacturing (M) Districts</u> Manufacturing, Limited (M-1) General (M-2)	<u>Commercial</u> Neighborhood Office (CNO) (Local) Neighborhood (CN-1) Live Work -1 (LW-1) Live Work -2 (LW-2) Office (CO) NODE*
<u>Special Purpose Districts</u> Public (P) Institutional Campus (IC)	
<small>* Node District. Nodes are intended to create walkable, vibrant mixed-use commercial areas in Kalumzoo neighborhoods with a focus on building forms that promotes inviting public places. Nodes allow a wide range of commercial uses on the ground floor with commercial and residential uses allowed on upper floors. Node locations can be found in the Master Plan, Future Land Development Map.</small>	

Table 2 provides a list of high-risk land-use activities that pose potential threats to groundwater. These land-use activities are considered high-risk regardless of zoning designation. Other high-risk land-use activities are identified in the EGLE document "Minimum Isolation Distances (From Contamination Sources and Buildings), Part 127, Act 368, P.A. 1978 And Act 399, P.A. 1976" (Attachment 1). This document specifies required well isolation distances considered for the issuance of Type I well permits. Attachment 1

shall be used when determining if a proposed land-use is allowed and what Standards to apply to protect groundwater as a condition of plan approval. To determine if a site is located in an Isolation area, refer to the City's online GIS (<https://www.kalamazoo.org/maps>) under the Wellhead Capture Zones Layer.

Table 2

High-Risk Land-Use Activities that Pose Potential Threats to Groundwater

<p>Commercial</p> <p>Analytical and clinical laboratories Animal feedlots Auto washes Boat builders/refinishers Automotive rental, sales, and service Establishments with fleets of trucks and cars Gas stations Motor vehicle repair/service shops Impoundment lots Concrete/asphalt/coal/tar companies Drum recycling and cleaning Dry cleaners and laundries Equipment repair Food processors/meat packers/slaughter Fuel oil distributors/stores Furniture manufacturing, stripping, or refinishing Funeral Homes Pesticide application services/stores/retailers Petroleum bulk storage/refineries/pipelines Photographic development Truck or rail tanker cleaning Wood preserving and treatment</p>	<p>Manufacturing</p> <p>Chemical, paint, and plastics manufacturing Metal manufacturing, machining, or plating) Mining operations/injection wells Pharmaceutical Manufacturers Pulp and paper industry Other manufacturing (textiles, marijuana, etc.)</p> <p>Transportation</p> <p>Airport maintenance/fueling areas Governmental agencies with truck and car fleets Salt piles/sand-salt piles Trucking/bus terminals Vehicle maintenance operations</p> <p>Utilities</p> <p>Electric power generation substations</p> <p>Waste Management and Recycling</p> <p>Landfills/dumps Transfer Stations Junk, scrap, recycling and salvage yards</p>
--	---

Groundwater Risk Designation Examples:

- A site with both high risk zoning and high risk land use shall be considered **High-Risk**
- A site that has low risk zoning and high risk land use shall be considered **High-Risk**
- A site with high risk zoning and a low risk land use shall be considered **Moderate-Risk**
- A site that has low risk zoning and low risk land use shall be considered **Low-Risk**

Disclaimer: There may be other influencing factors to consider.

3.0 GENERAL PLAN AND CONSTRUCTION STANDARDS

The minimum requirements for all plans reviewed for stormwater and wellhead protection compliance are provided below, in addition to some requirements for environmental review/approval. This list is NOT intended to be inclusive of the requirements for all sites and associated plans. The City may have additional requirements. Specific requirements for stormwater storage (detention/retention), treatment, chemical containment, etc.; and definitions for specific words, acronyms, etc. used below are provided in subsequent sections of this document.

- Stormwater Calculations (unless directed otherwise) using the Stormwater Calculations Worksheet (Attached and available at: <https://www.kalamazocounty.org/Business-Development/Project-Review/Apply-for-Site-Plan-Review/Site-Plan-Review-Forms-and-Documents>).
- Maps of existing stormwater infrastructure with details (collection, treatment, and discharge strategy(s)).
- Existing infrastructure that will be used/reused shall be cleaned and inspected, and notes shall be provided on the plans to do so (pipes, structures, catch basins, drywells/leaching basins, Manufactured Treatment Devices (MTDs), detention systems, retention systems, containment systems, etc.)
- Environmental Reports, such as: Phase I Environmental Site Assessment (ESA), Phase II ESA, Baseline Environmental Assessment (BEA), Vapor Intrusion Assessment, etc., where available or as required.
- Soil boring logs, geotechnical borings and environmental sampling results for proposed infiltration areas, where required.
- Chemical Storage Inventory (CSI) Form, Safety Data Sheets (SDSs), and other forms, as required.
- Identification of regulated substance storage, generation, use, loading/unloading or other areas; and associated chemical containment strategy(s).
- Spill Contingency Plan (SCP) or other relevant emergency response/environmental contingency plan(s) for all existing and proposed sites that possess regulated substances at or above 55 gallons aggregate for liquids, or 440 pounds dry weight for dry substances.
- Stormwater discharges shall provide spill containment for sites with a high risk of accidental spills of regulated substances or other polluting materials.
- For sites where stormwater infrastructure will be added, provide engineered and scaled plans of proposed stormwater collection, treatment, and discharge strategy(s), including but not limited to:
 - Proposed grades

- Runoff shall NOT be discharged onto streets or sidewalks, or onto other properties (without a drainage agreement).
 - Runoff from paved or other generally impervious areas shall be collected at intervals not obstructing the flow of vehicular or pedestrian traffic and shall not create standing water or cause unnecessary erosion of soil or other material.
- o Invert and rim elevations for all proposed and existing stormwater infrastructure.
 - o Details for MTDs, structures, detention/retention systems, etc.
 - o Detention/retention systems shall drain completely between runoff events.
 - o If a connection to the MS4 is proposed or required, detail for the controlled release/overflow structure shall be provided. Unless directed otherwise, the controlled release/overflow structure shall include a 3-inch diameter orifice at an elevation equal to the lowest elevation of the proposed detention system, and a 12-inch diameter overflow at an elevation equal to the proposed detention system's full elevation or lowest rim elevation.
 - o Containment systems and detention systems that do not infiltrate shall have a minimum 60 mil thick liner constructed of a material(s) that is chemically compatible with onsite materials (existing contamination, regulated substances, etc.). This does not apply to systems constructed of sealed tanks/vessels or solid walled pipes.
 - o All proposed pipes in the right-of-way (ROW) and at the point of connection to the MS4 shall be reinforced concrete pipe (RCP), unless otherwise approved.
 - o A note shall be on the plans indicating that all areas disturbed within the right-of-way (streets, sidewalks, etc.) shall be restored in-kind, to existing or better conditions.
 - o Reuse existing connections to the MS4, where possible, provided the existing pipe is inspected (televised) and found to be structurally sound with no breaks, leaks, etc. (repair, replacement or lining damaged pipe may be allowed).
 - o Proposed site improvements shall maintain minimum 10-foot lateral clearance and 18-inch vertical clearance from existing storm sewer, sanitary sewer and municipal water infrastructure, unless otherwise approved.
 - o Proposed catch basins shall have a minimum 2-foot-deep sump.
- For sites where new buildings roofs, eaves, gutters, and/or downspouts are proposed, runoff storage shall be provided, where applicable and feasible; and runoff shall NOT be directed toward streets, sidewalks, or adjoining properties (without a drainage agreement between Landowners). Connection of roof drains to the MS4 may be permitted, where necessary.

- All sites shall comply with all relevant City Ordinances associated with stormwater, wellhead protection, regulated substances, site plan, etc.
- Required forms, where applicable (attached):
 - Stormwater Calculations Worksheet
 - Uniform Stormwater Standard 1: Water Quality Treatment Volume and MTD Worksheet
 - Uniform Stormwater Standard 2: Channel Protection Volume Worksheet
 - Stormwater Best Management Practices Operations and Maintenance Agreement (Attachment 2)

3.1 CONSTRUCTION ACTIVITIES

An appropriate material and equipment maintenance and storage area shall be identified on the site plan. If construction equipment is to be temporarily stored in an open area:

- The storage site shall not be located within the drip line of trees.
- The storage site shall not be within 100 feet of a watercourse, wetland, or storm sewer inlet, unless approved by the City. Runoff shall be diverted away from watercourses and wetlands.
- The construction site shall be designed and operated to prevent excess solids from being discharged into wetlands and surface waters, whether directly or indirectly (e.g., via the MS4).
- Secondary containment is required for regulated substances stored in containers larger than typical household quantities during site construction activities. These substances include, but are not limited to, fuels, oils, and lubricants. All regulated substances must be stored in a manner that diminishes the possibility of a release to the environment (soil, surface water and groundwater).

3.1.1 SOIL EROSION AND SEDIMENTATION CONTROL

Refer to Chapter 30 of the Kalamazoo Code of Ordinances "Soil Erosion and Sedimentation Control" regarding requirements to control soil erosion and sedimentation with respect to earth change activities within the City. Proper provisions for water disposal and protection of soil surfaces are required during and after construction in order to promote the safety, public health, and general welfare of the City, as well as to limit the exposed area of any disturbed land for the shortest possible period of time. The Building Division of the City's Community Planning and Economic Development Department (CPED) administers the City's Soil Erosion and Sedimentation Control (SESC) program and issues associated permits when required.

3.1.2 DEWATERING

Dewatering is the temporary withdrawal and subsequent discharge of groundwater from a construction site to the extent necessary to maintain below grade excavation(s) free from infiltration of groundwater and/or

surface water. If dewatering is necessary, conditional approval from the Director of Public Services or designee must be obtained prior to discharge and a dewatering plan must be submitted to and approved by the following depending on the discharge strategy:

- Surface Water Discharge - City's Water Programs Manager for water quality review and City's Stormwater Engineer for quantity/capacity review (Michigan Department of Environment, Great Lakes, and Energy (EGLE) approval is required and a copy of the approval/permit shall be provided).
- Storm Sewer Discharge – City's Water Programs Manager for water quality review and City's Stormwater Engineer for quantity/capacity review (EGLE permitting may also be required).
- Sanitary Sewer Discharge - City's Environmental Compliance Supervisor for water quality and City's Sanitary Engineer for quantity/capacity review. Any proposed discharge to the sanitary sewer must be approved by the Wastewater Superintendent or designee.
- County Drain – Written permission shall be obtained from the Kalamazoo County Drain Commissioner.

The plan shall include items such as a map detailing dewatering activities, the proposed dewatering pumping rate, proposed period of dewatering activity, discharge entry point, discharge outfall location, dewatering contingency plan, and emergency contact information, known historic parameters of concern (e.g., hydrocarbons, metals, volatile organic compounds, etc.), identification of known contaminated sites and any associated plumes within a radius of 1,000 feet of the dewatering points, and a dewatering sampling plan (frequency of sampling, parameters to be analyzed, etc.). At a minimum, Total Suspended Solids (TSS) concentrations shall be less than 80 mg/L and routinely monitored as an indicator of effective sediment control and reported daily to the City's approving personnel or designee. Other requirements may be applicable, dependent upon site conditions and characteristics.

Sediment basins, filters, or other BMPs may be required to filter dewatering fluids prior to being discharged to a surface water, storm sewer, or sanitary sewer. Dewatering must be performed so that the velocity of the discharged water does not cause scouring of the receiving area. If the receiving area is a structural BMP (i.e., basin or sump), the design of the BMP shall be based on the anticipated dewatering flow rate. Sediment-laden water from cofferdams, trenches, and other areas that need to be dewatered shall be pumped through a geotextile material before the water is discharged.

The dewatering site shall be inspected, and its condition documented at least twice daily to ensure the dewatering system is operating in accordance with the approved plan. If any deficiency is identified, immediate action must be taken to correct the deficiency(s) and regain compliance with the approved plan. If a BMP is not functioning properly, appropriate maintenance procedures for the specific BMP(s) must be performed immediately and/or the BMP(s) replaced as appropriate.

3.1.3 FILL MATERIAL

Use of fill material containing regulated substances at concentrations greater than state and/or federal cleanup criteria is prohibited within Capture Zones and may only be used at sites outside Capture Zones in accordance with state and federal rules and regulations. Throughout the Capture Zones where filling is required, fill that originates from a clean source is required (i.e., not contaminated with regulated substances or other contaminants). The fill source shall be from a non-industrial area and NOT from sites of known or suspected contamination, including, but not limited to: industrial and/or commercial sites where hazardous materials were used, handled, or stored; unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil; EGLE Part 201 facilities; EGLE Part 213 sites; Resource Conservation and Recovery Act (RCRA) sites or Comprehensive Environmental Response, Compensation and Liability Act (CERCLA/Superfund) sites. If the source is from an agricultural area, care shall be taken to ensure the fill does not contain pesticides or agricultural waste byproducts, such as manure. Alternatives to using fill from construction sites, include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that these materials are also uncontaminated. For further information regarding the relocation of contaminated soil refer to Section 324.20120c Relocation of contaminated soil, of the Michigan Natural Resources and Environmental Protection Act (NREPA) of 1994, Act 451 of 1994, as amended.

3.1.4 CONTAMINATED SITES

Site plans must take into consideration the location and extent of any contaminated soils and/or groundwater on the site and the need to protect human health and the environment. For this purpose, environmental documentation of the site's environmental condition shall be required (Phase I ESA, Phase II ESA, Baseline Environmental Assessment (BEA), Vapor Intrusion Assessment, or other pertinent information available) unless otherwise approved. A depiction of the location and extent of contamination shall be submitted with the site plan. See Section 9.0 for further information regarding contaminated properties.

Any site used to temporarily store contaminated soils (such as during removal of an underground storage tank (UST)) must do so in a designated area indicated on the site plan. This area shall be located indoors whenever possible but may be located outdoors provided that the soil/material are containerized in Michigan Department of Transportation (MDOT)-approved drums; or covered with tarp or plastic sheeting and placed on a paved/impermeable surface with containment (curb, dike, or berm) to prevent stormwater run-on and runoff.

In most situations, due care obligations apply even if the owner/operator is not responsible for the site's contamination. Additional details of the due care obligations are provided in Section 9.1. As part of the due care obligations, vapor intrusion mitigation may need to be employed at contaminated sites due to potential health risks associated with inhaling contaminants. Mitigation is typically required when contaminants are present in soil and/or groundwater at concentrations greater than EGLE Vapor Intrusion Screening Levels.

These sites (and potentially other contaminated sites for which sampling data does not exist) require vapor intrusion assessments and mitigation (if warranted) prior to plan approval. This is *consistent with public health, safety, and welfare*, as required by the City's Site Plan Review Ordinance.

3.1.5 PARKING AREAS

All parking areas shall be designed and constructed with a minimum 1% cross slope to prevent ponding and shall NOT allow for sheet flow or discharge of stormwater toward streets, sidewalks, or adjoining properties. Parking areas that are designed to accommodate 20 or more vehicles or exceed 6,000 square feet are considered "large parking areas" and shall be paved with concrete, asphalt, or an equivalent smooth, impervious surface with a minimum 1% cross slope to prevent ponding of water. These areas shall be served by an appropriate and approved stormwater treatment system as described in Section 5.0. Large parking areas shall be designed and constructed such that all runoff is directed to an approved onsite stormwater collection and treatment system. Large parking areas intended for limited or short-term use (i.e., churches or similar), with limited potential for contamination, may be granted exceptions or modifications where other controls or solutions will be incorporated. Parking areas that will be reconstructed shall be designed and constructed to meet the minimum requirements provided herein. Section 5.0 provides additional requirements for parking areas.

3.1.6 FLOOR DRAINS AND DRY WELLS / LEACHING BASINS

General purpose floor drains must be connected to a public sanitary sewer system or an onsite holding tank (not the storm sewer or a septic system) in accordance with local, state and federal rules and regulations. General purpose floor drains that discharge to groundwater or to a stormwater collection system are prohibited.

Dry wells (leaching basins) are a type of drainage structure used for the underground disposal/infiltration of stormwater runoff. Dry wells are prohibited within 1-Year Capture Zones and within 200 feet of a Type I Public Water Supply well. The use of dry wells is restricted within 5-Year and 10-Year Capture Zones (see Section 5.0). Where allowed, dry wells shall only receive stormwater runoff that has been pretreated or untreated runoff that has a low likelihood of being contaminated, including: non-industrial roof runoff, sidewalk runoff, greenspace runoff, and/or runoff from parking areas that are not considered large parking areas. Dry wells may also require a groundwater discharge permit from EGLE. The site plan shall show the location of existing and proposed dry wells.

3.1.7 WELLS

All existing, proposed, and abandoned wells, including potable water wells and monitoring wells, shall be depicted on the site plan.

The WP-O Ordinance prohibits within any Capture Zone:

- Installation of a private water well for the purpose of drinking water or irrigation if, in the determination of the City's Department of Public Services, public water service is reasonably available.
- Use of a private well, if said well is likely to cause an adverse impact to the public water supply.
- Installation or use of a water well not installed for the purpose of drinking water or irrigation unless it is determined by the Department of Public Services that the well owner (or representative) has scientifically demonstrated that the well will not cause an adverse impact to the public water supply.
- Drilling for natural gas or petroleum, whether for exploration, production, or otherwise.
- Presence of an abandoned well, which is defined as any well that has either been discontinued for more than one year, is in such disrepair that its continued use for obtaining groundwater is impractical, has been left uncompleted, is a threat to groundwater resources, or is a health or safety hazard. A well shall not be considered abandoned if it has been properly plugged pursuant to the Groundwater Quality Control Act, Part 127, 1978 PA 368. When a well is plugged, formal well abandonment logs shall be completed and provided to the City's Water Programs Manager, except in cases where wells were abandoned in the past and no well abandonment logs are available.

3.1.8 WELL ISOLATION DISTANCE REQUIREMENTS

Per the WP-O Ordinance, "Within a capture zone, no person shall cause or allow uses or activities that would violate the terms and conditions set forth in the document 'Minimum Well Isolation Distances (From Contamination Sources and Buildings), Part 127, Act 358, P.A. 1978 and Act 399, P.A. 1976', as amended." This document is presented as Attachment 1. These land use restrictions directly relate to the City's ability to replace or add new wells to its Public Water Supply System, as they are part of the permit criteria used by the EGLE.

3.1.9 SEPTIC SYSTEMS

The construction or replacement of any privy, privy vault, septic tank, cesspool, or other facility intended or used for the disposal of domestic or non-domestic wastewater is prohibited within the 1-Year Capture Zones. Sites within the 10-Year Capture Zones must connect to the municipal sanitary sewer, where available. For sites where the municipal sanitary sewer is not available, all septic systems shall comply with Kalamazoo County sewage disposal system requirements, including the acquisition of necessary permits. Flow restrictors and low-flow faucets for sinks and spray nozzles shall be installed to minimize hydraulic loading to subsurface disposal systems. Floor drains shall not be connected to septic systems. The locations of existing and proposed septic tanks and drain fields shall be indicated on the site plan. Refer to Chapter 28 of the Kalamazoo Code of Ordinances "Wastewater Discharge Regulations and Enforcement Procedures" for other specific issues regarding wastewater.

3.1.10 COOLING WATER

Closed-loop cooling systems shall be considered to eliminate cooling water discharges within Capture Zones. Alternatively, non-contact cooling water may be discharged to a storm sewer, sanitary sewer, or stream provided all local, state, and federal discharge requirements are met. Discharge of cooling water to site soils/groundwater is not permitted without City approval. Discharges shall be depicted on the site plan.

3.1.11 ROAD SALT STORAGE AND USE

All salt and associated sand mix piles must be stored on an impermeable surface and covered with a waterproof material. Inside the 1-Year Capture Zone, salt shall be stored in indoor sheds surrounded by impervious paving. Stockpiles shall not be located near surface waters, in flood plains, or areas with steep slopes, and shall be designed to prevent surface water run-on and runoff. Snow containing road salt shall not be brought to sites inside 1-Year Capture Zones for disposal. Alternative deicing chemicals include calcium chloride, magnesium chloride, calcium magnesium acetate (CMA), and products that are mixtures of chlorides and organic compounds. Environmentally friendly snow and ice removal products and procedures are encouraged.

3.1.12 SUMP PUMPS

Sump pumps may only be connected to and/or discharge to the City's storm or sanitary sewer system(s) if approved by the Public Services Director, and the discharge shall only occur if consistent with City codes and ordinances. § 29-4 (3)(a) allows for the discharge of water from crawl space pumps, footing drains and basement sump pumps to the storm sewer system (MS4), provided that the discharged water is not identified by the City as a source of pollutants or deemed to be an interference to the proper operation and maintenance of the stormwater system. Where allowed, a Stormwater Agreement (specific to sump pumps) shall be executed and filed with the Kalamazoo County Register of Deeds to document City approval and Landowner acceptance in perpetuity. The Agreement includes, but is not limited to, the following provisions that the Landowner shall agree to:

- (i) Landowner shall hold the City harmless in the event of property damage/flooding resulting from potential backflow of stormwater into the home from the City's storm sewer system resulting from the connection/discharge;
- (ii) Landowner shall be fully responsible for installing and maintaining backflow prevention devices to prevent backflow of stormwater into the home;
- (iii) Landowner shall properly store potential pollutants/hazardous substances (i.e., solids, debris, sediment, chemicals, cleaners, oils, detergents, etc.) off the basement floor and provide secondary containment for such materials to prevent discharge to the City's storm sewer system; and,

- (iv) Landowner shall ensure that the discharge and associated controls serve the intended function in perpetuity.

Sump pumps shall NOT discharge directly or indirectly to sidewalks, roads, sewers, surface water (lakes, rivers, streams, wetlands, ditches, etc.) without City approval and shall only be allowed if in compliance with local codes, ordinances and policies, and state and federal rules and regulations.

3.2 REGULATED SUBSTANCES AND PROCESS ACTIVITIES

The WP-O Ordinance defines "Regulated Substances" as:

- Substances for which there is a safety data sheet, as established by the United States Occupational Safety and Health Administration, and the SDS cites possible health hazards for said substance;
- Hazardous waste as defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended;
- Hazardous substances as defined by the Comprehensive Environmental Response, Compensation and Recovery Act (CERCLA);
- Radiological materials; and,
- Biohazards.

Regulated Substances shall not include:

- Substances in an amount equal or less than 2,200 pounds that are in an area capable of fully containing a total release of said substance or an area that would drain the substance to a wastewater treatment system capable of treating the released substance(s) (excluding septic tanks);
- Substances in a parked or stopped vehicle in transit, provided the vehicle is stopped or parked for less than 72 hours;
- Substances, such as gasoline or oil, in operable motor vehicles or boats so long as used solely for the operation of the vehicle, but not the tanker portion of a tank truck;
- Pressurized gases in a chemical storage tank such as chlorine, propane, hydrogen, and nitrogen;
- Refrigerants contained within equipment and used for onsite air cooling or in household appliances;
- Substances contained within electrical utility transformers/switches; or,
- Substances used in construction for which all necessary permits have been obtained, and in accordance with the "Performance Standards."

Refer to the WP-O Ordinance for further information.

3.2.1 REGULATED SUBSTANCES USE AREAS

The possession of regulated substances, including fuel in quantities that exceed 55 gallons aggregate for liquid materials or 440 pounds aggregate for dry weights, unless prepackaged and intended for retail sale or for commercial or household use (such as salt used in water softeners, fertilizers, pesticides, herbicides) is prohibited in the 1-Year Capture Zones and are only allowed in the 5-Year and 10-Year Capture Zones if engineering controls are designed and implemented consistent with the BMPs contained herein, the City's Fire Code, and applicable State of Michigan and federal laws and regulations. Where otherwise permitted (outside Capture Zones), sites where regulated substances are stored, used, or generated shall be designed to prevent spills and discharges of such materials to the environment (i.e., soil, groundwater, surface water, and stormwater). The storage or presence of a regulated substance in a manner in which the substance could reasonably be released to the environment is prohibited. A Spill Contingency Plan is required for all sites within the Capture Zones that possess regulated substances in any quantity. Additionally, a Chemical Storage Inventory Form (Attachment 3) and an SCP are required for all sites located outside of capture zones that possess regulated substances in quantities greater than 55 gallons aggregate for liquid materials or 440 pounds aggregate for dry weights.

Floor surfaces in regulated substance work areas, storage areas, and transfer areas shall be impervious to the types of materials that may be used or generated at the facility. The floor shall be pitched to an appropriate floor drain that is connected to sanitary sewer, a sump, or a holding tank; and entrances shall be designed to prevent stormwater runoff from entering the building and spills from leaving the building. Curbing, sills, and internal floor berms shall be used to isolate spill-prone areas, where necessary.

Whenever possible, activities involving regulated substances shall be conducted indoors. If not feasible, activities that could result in a release shall be segregated from other activities and conducted on an impervious surface. The surface shall be graded to minimize run-on of stormwater and runoff of spills, and shall be adequately designed to prevent spilled regulated substances from escaping the area. Drains in these areas shall be connected to a holding tank or the sanitary sewer, with City approval and appropriate pretreatment. The area shall be covered, where possible. If potentially polluting activities cannot be covered and discharge to the sanitary sewer is proposed and subsequently approved, onsite containment and detention shall be provided prior to discharge to prevent surcharging of the sanitary sewer.

Whenever possible, sites shall select non-hazardous or less-hazardous chemicals, especially for processes such as degreasing, cleaning, and plating that have historically used toxic materials. In addition, when possible, materials such as oils should be standardized throughout a site to reduce the quantity of leftover material and mixed waste. Practices that minimize waste generation are encouraged.

3.2.2 SPILL RESPONSE EQUIPMENT

All sites intending to use, store, transfer or generate regulated substances in quantities meeting or

exceeding 55 gallons for liquids or 440 pounds for dry weight are required to have emergency spill response equipment and must indicate on the site plan the location(s). Spill response equipment shall be located throughout the site so that spills may be contained. The specific type(s) of spill response equipment shall be compatible with and appropriate for the types of regulated substances stored onsite, other engineering controls present, the potential threat to site soils/groundwater/stormwater/surface water, and the site location. A Spill Contingency Plan is required for all sites that are required to have spill response equipment.

3.2.3 LOADING / UNLOADING AREAS

Loading/unloading areas used to transfer regulated substances shall be indicated on the site plan. The areas shall be constructed of materials sufficiently impervious to the materials loaded and unloaded in that area. Loading/unloading docks shall be isolated from storm drains and dry wells to prevent potential spills from contaminating stormwater or groundwater. If floor drains and/or dry wells already exist, inlets must be appropriately protected during loading/unloading operations to prevent pollutants from entering the storm sewer or infiltrating within pervious surfaces. Loading/unloading areas shall be covered or enclosed and be designed to reduce stormwater run-on. If the loading/unloading area is uncovered (due to infeasibilities), grading and/or berms shall direct runoff to a dead-end sump or another appropriate collection device. Where appropriate, a post indicator valve (PIV) shall be installed. The PIV shall be left open to drain precipitation, except during loading/unloading. If tanker trucks are used for regulated substance loading or unloading, full containment of the loading/unloading area shall be provided.

Spill response equipment shall be provided in all regulated substance loading/unloading areas. The location(s) of loading/unloading areas and associated spill response equipment shall be depicted on the plans and in the SCP.

3.3 REGULATED SUBSTANCE STORAGE UNITS

A regulated substance storage unit is considered to be any underground storage tank (UST), above ground storage tank (AST), drum, carboy, or other container used for the storage of one or more regulated substance(s) including silo, bag, tank wagon, box, glass, bottle, cylinder, total bin, truck body, rail car, tanker, or tool crib, when used for permanent or temporary storage of regulated substances. The following standards apply to regulated substance storage units: All current and proposed regulated substance storage units/areas shall be indicated on the site plan with stored contents, stored volumes and secondary containment strategy(s).

3.3.1 GENERAL PROVISIONS

Regulated substance storage units containing greater than 55 gallons for liquids or 440 pounds for solids (dry weight) are prohibited within the 1-Year Capture Zones. Within the 5-Year and 10-Year Capture Zones and outside the Capture Zones, regulated substance storage units containing greater than 55 gallons for liquids or 440 pounds for dry weight shall be indicated on the site plan and are allowed if the following

standards are applied.

- Unless other sufficient measures have been implemented at the site, these regulated substance storage units shall be completely contained, isolated from floor and storm drains, have sealed surfaces, comply with fire-safety regulations, and shall not be accessible to unauthorized personnel. Whenever possible, regulated substance storage units shall be consolidated into one location for better control of material and waste inventory. All storage units shall be properly labeled as to contents and periodically inspected for evidence of leaks, improper storage, or potential hazards that may result in a release of regulated substances being stored in or transferred into or out of the storage unit. All doors, valves, or other openings through which a release could occur must be locked or otherwise secured when not in use.
- Regulated substances shall be stored inside, whenever feasible. If not feasible, outside storage areas shall be covered (preferably with a roof) and/or designed to prevent release to the environment. A curb, berm, and/or grading shall be provided along the perimeter of outdoor storage areas to prevent the run-on of uncontaminated stormwater from adjacent areas, and offsite runoff of stormwater from the storage area(s). The area inside the curb shall slope to a drain, then to a holding tank or sanitary sewer (if approved) with a positive control such as a lock, valve, or plug. See Section 3.3.2 for secondary containment requirements.
- Regulated substances stored outdoors shall be in product-tight containers that are protected from weather, leakage, accidental damage, and vandalism. Sites storing regulated substances outdoors must implement security measures that are appropriate for the material stored and the nature of the site. Measures to be implemented, as appropriate, include:
 - Development and implementation of an SCP, Spill Prevention Control and Countermeasure Plan (SPCC), and/or Stormwater Pollution Prevention Plan (SWPPP), where appropriate and as required by state and federal rules and regulations.
 - Fencing the regulated substance storage unit or the entire site and locking or guarding entrance gates when the storage unit/facility is not in production or is unattended.
 - Ensuring that valves permitting direct outward flow of a container's contents have adequate security measures, so they remain in the closed position when in non-operating or standby status.
 - Preventing unauthorized access to starter controls of pumps.
 - Providing facility lighting that will assist in the discovery of releases during hours of darkness and prevention of discharges occurring through acts of vandalism.
 - Surveillance cameras and/or audible remote leak detection may be required at some sites.

As provided in Section 6.6F "Fire and Explosive Materials" of Appendix A of the Kalamazoo Code of Ordinances (Zoning Ordinance), the storage and handling of flammable liquids, liquefied petroleum gases,

and explosives shall comply with the state rules and regulations as established by Public Act No. 207 of 1941, as amended.

3.3.2 SECONDARY CONTAINMENT FOR REGULATED SUBSTANCES

Secondary containment shall be provided for all regulated substance storage units. Secondary-containment facilities shall be designed and constructed such that potential polluting material cannot escape from the unit by gravity through sewers, drains, or other means directly or indirectly into a sewer or stormwater collection system or to the waters of the state, including groundwater. Secondary containment shall include protective measures, such as double walls, dikes, vaults, impervious liners, impervious surfaces, etc. The secondary containment system (including associated pipes, structures, surfaces, etc.) shall be constructed of materials that are compatible with the stored material(s) and shall be impervious to the stored material(s).

Exterior secondary containment shall be constructed of poured concrete or a pre-manufactured containment tub. Concrete-block containment is prohibited in outdoor areas because it can easily crack and does not weather well. Exterior secondary-containment areas shall be capable of containing 110% of the largest vessel in containment, plus freeboard to contain precipitation from a minimum 25-year 24-hour storm. Alternatively, the vessel may be a double-walled tank with interstitial monitoring (see Section 3.3.3). Containment must be higher than the 100-year flood level. When possible and as appropriate, exterior storage of regulated substances and their containment structures shall be covered to protect the containers from exposure to precipitation. If not possible, the surface shall be sloped to a collection point or sump and/or curbing shall be provided to allow for controlled removal of accumulated stormwater or spilled regulated substances. If the containment area is penetrated by a drainage or conveyance pipe, the opening shall be sealed on both sides to ensure a liquid-tight seal. Drainage pipes shall have a lockable valve that shall be kept closed and locked under normal conditions. The valve shall only be opened when the determination is made by an EGLE Certified Stormwater Operator that the discharge of stormwater is acceptable (this may require a Stormwater Permit with Required Monitoring). Discharge of contaminated stormwater from a secondary-containment structure to soils, surface water, or the stormwater collection system is prohibited.

Secondary containment for indoor ASTs may be provided by the building, as long as discharge from the AST cannot escape the building via floor drains, entrances, or any other means, and no specific containment is required by other regulations. Although not permitted for outdoor containment structures, concrete-block containment may be used indoors with City approval. For other specific requirements, refer to Appendix A — Zoning Ordinance of the Kalamazoo Code of Ordinances, including 6.6G (Hazardous Materials) and H (Materials and Waste Handling), and 6.3.H.7.v.

3.3.3 ASTs

All ASTs shall be certified, installed, operated, maintained, closed, or removed in accordance with local, state and federal regulations, including EGLE and Michigan Department of Licensing and Regulatory

Affairs (LARA) rules and regulations and local fire codes and ordinances. **All current and proposed ASTs shall be depicted on the plans, including volume, contents, and containment strategy(s).** A copy of any required local or state AST registration document shall be provided to the City's Water Programs Manager.

No AST shall be located in direct contact with site soils. The tank shall have sufficient ground clearance for visual inspection of the bottom of the AST for deterioration unless the size of the AST prevents raising the tank or if the AST is a concrete-vaulted tank.

Any AST subject to vehicle impact must be protected against impact with physical barriers. Objects used as physical barriers shall be depicted on the site plan.

The following minimum requirements apply to all ASTs:

- ASTs containing regulated substances shall have secondary containment that complies with all local, state and federal rules and regulations. If a double-walled AST is selected, primary tank leak detection with an audible alarm shall be provided (interstitial monitoring).
- Tank piping shall be located within secondary containment and/or double walled.
- Piping shall be designed such that liquid will not continue to flow by gravity or siphoning from the storage tank if the piping or fittings break. Fuel filling ports shall have secondary containment beneath the fill area to prevent a release from reaching the pervious ground surface or storm drain/inlet.
- Tanks shall be equipped with a shut-off valve, preferably an automatic shear valve, with the shut-off located inside the tank.
- For flood control, all exterior ASTs shall have a monitoring system and secondary standpipe above the 100-year flood-control level for monitoring and recovery.
- Fill-pipe inlets shall be above the elevation of the top of the storage tank.
- ASTs shall have overflow protection, such as a visual liquid-level-indicator gauge or alarms.

3.3.4 USTs

USTs are prohibited within the 1-Year Capture Zones if 55 gallons aggregate for liquid material or 440 pounds aggregate for dry weights are exceeded and shall not be used in the 5-Year or 10-Year Capture Zones unless the use of ASTs is impractical. All USTs shall be certified, installed, operated, maintained, closed, or removed in accordance with local, state and federal regulations, including: EGLE and LARA rules and regulations and local fire codes and ordinances.

If new tanks are to be installed, a copy of all registration documents shall be provided to the City's Water

Programs Manager. If existing USTs have been or will be closed, all EGLE closure procedures shall be followed, and a copy of the closure documents shall be submitted to the City's Water Programs Manager. **All current and proposed USTs shall be depicted on the plans, including volume, contents, and containment strategy(s).**

For fueling establishments where storage, handling, or use of fuels exceed 55 gallons aggregate refer to Section 4.1 Fuel Establishments.

3.3.5 HOLDING TANKS

Holding tanks shall adhere to the Standards listed for ASTs and USTs, including secondary containment, unless otherwise approved by the City.

3.3.6 TRUCKS, TRAILERS, TANKERS, RAIL CARS, AND TOOL CRIBS

The possession of regulated substances for more than 72-hours in trucks, trailers, tanker trucks, rail cars, tool cribs, or similar vehicles is prohibited in 1-Year Capture Zones where the quantity of regulated substance(s) exceeds 55 gallons aggregate for liquid materials or 440 pounds aggregate for dry weights, unless allowed pursuant to the WP-O Ordinance.

In the 5-Year and 10-Year Capture Zones, the possession of a regulated substance stored in trucks, trailers, tanker trucks, rail cars, tool cribs, or similar vehicles for more than 72 hours is prohibited, unless secondary containment is provided that is sufficient to contain the entire contents of the largest distinct compartment of the container. Appropriate security measures shall be implemented, such as those in Section 3.3.1.

3.3.7 GENERATORS

Standby generators shall be powered by natural gas or propane fuel, unless technically infeasible for the site and/or application. If a generator must be powered by a regulated substance, such as diesel fuel, storage of the regulated substance shall be consistent with the Standards provided herein and all local, state and federal codes, ordinances, rules and regulations, including but not limited to:

- Storage of regulated substances within 1-Year Capture Zones in excess of 55 gallons is prohibited. If a lesser volume of fuel is proposed and allowed within a 1-Year Capture Zone, containment shall be provided, and an SCP shall be prepared and maintained.
- ASTs and USTs used for fuel storage shall be double walled with interstitial monitoring and leak detection alarm(s).
- Generator and associated equipment shall be placed on an impervious surface with curbing and/or grading that is sufficient to contain incidental fuel spills associated with filling and maintenance operations.

- For all sites with proposed and/or existing generators and associated equipment that contains regulated substances in excess of 55 gallons, an SCP shall be prepared, maintained and submitted to the City for review and approval.
- Spill response equipment shall be provided, and the location(s) shall be depicted on the plans.

3.4 WASTE

3.4.1 SOLID WASTE

Solid-waste dumpsters must have lids and be stored on a paved surface, unless otherwise approved by the City. All dumpsters shall be indicated on the site plan. Refer to the Kalamazoo Code of Ordinances, Chapters 15 and 31, for other requirements.

3.4.2 SCRAP METAL

Dumpsters and drums containing scrap metal that may contain residual chemicals or oils shall be stored on an impervious surface in an enclosed area or covered with an impervious liner to prevent accumulation of stormwater. Where stormwater may otherwise accumulate in the scrap metal collection units, drain plugs shall be left in place to prevent discharge onto the ground, and collection units shall be located on an impervious surface with a separate collection catch basin containing an oil/grit separator that discharges to the municipal sanitary sewer (with prior approval and pretreatment) or a holding tank.

3.4.3 HAZARDOUS WASTES

If site activities involve generating, transporting, storing, recycling, or treating hazardous waste, this shall be indicated on the Chemical Storage Inventory Form (Attachment 3) and along with the site's waste generator status (e.g., small-quantity generator). Existing and proposed hazardous waste accumulation areas shall be indicated on the plans. Hazardous waste management techniques shall comply with all applicable local, state, and federal requirements.

Site operations involving hazardous waste shall be physically segregated from other operations, where possible. Work areas and all hazardous waste storage areas shall be located within a containment area with appropriately sealed floors and no direct access outside the facility. Refer to the City of Kalamazoo Code of Ordinances, including Chapter 6, Sections 6.6G and 6.6H, for other specific requirements.

3.4.4 LIQUID WASTE PONDS

Open liquid-waste ponds are not permitted without City approval. Any such ponds must be engineered to be protective of the environment, particularly groundwater, and shall comply with all applicable local, state and federal rules and regulations.

4.0 LAND USE SPECIFIC STANDARDS

This section highlights specific standards for certain land-use types identified in the Ordinance as being prohibited in specific Capture Zones or requiring site-specific review. All land uses should incorporate the general standards detailed in Section 3.0. Other use-specific standards not contained herein may be required.

4.1 FUELING ESTABLISHMENTS

Fueling establishments where storage, handling, or use of fuels exceed 55 gallons aggregate including, but not limited to, gasoline, diesel, kerosene, and jet fuel are prohibited in the 1-Year Capture Zones. ASTs and USTs are prohibited in 5-Year and 10-Year Capture Zones, unless such tanks meet the minimum requirements provided herein.

The fuel dispensing area shall be paved with concrete or an equivalent smooth impervious surface (not asphalt) with a 1 to 4% slope to prevent ponding of stormwater. The fuel dispensing area shall be covered to at least one foot beyond the maximum reach of the hose and nozzle assembly. The cover/canopy shall not drain onto the fuel dispensing area. The covered fuel dispensing area shall be separated from the rest of the site by a grade break that prevents run-on of stormwater and runoff of fuel to the maximum extent practicable. Drains at the site shall be labeled to indicate whether they flow directly to the sanitary sewer or storm sewer or if they flow through an oil/water separator. All stormwater shall be managed in accordance with the Standards presented herein.

All fuel dispensing nozzles shall have automatic shut-off mechanisms to prevent overfilling. Spill response equipment shall be stored in the fuel dispensing area. The proposed location of this equipment shall be indicated on the plans.

ASTs and USTs at fueling areas shall be in compliance with local, state, and federal regulations and comply with the Standards detailed in this document. In addition, when fueling is not the primary land use, fueling should be conducted at a location equipped to handle fuel spills properly. If equipment/vehicle fueling is conducted onsite, fueling shall be conducted in properly designed, designated areas, and indicated on the plans.

The Standards detailed in this section also apply to existing, non-conforming fueling establishments within Capture Zones. Appendix A of the Kalamazoo Code (Zoning Ordinance), Sections 4.2 N and O provide general use-specific standards for gasoline and fuel sites, with and without vehicle service or repair.

4.2 VEHICLE WASHING

Commercial vehicle washes (car washes, truck washes, etc.) shall be covered by a roof, have an impervious surface, and be bermed or curbed to prevent stormwater run-on and wash water runoff. The wash area shall

be sloped for wash water collection, which may be discharged to a wash water recycling system, directly to the sanitary sewer (with approval and appropriate pretreatment), or to a holding tank (from which the material may be pumped to the sanitary sewer or to an offsite treatment facility). Because wastewater from vehicle washing represent significant flows that can hydraulically overload an oil/grit separator, any such treatment device must be sufficiently sized to accept these volumes.

4.3 PRESSURE WASHING/STEAM CLEANING

Pressure washing and steam cleaning activities are permitted within covered, completely contained areas, particularly where these methods replace cleaning/degreasing operations that would otherwise use solvents. Pressure washing and steam cleaning may be conducted on a sealed impervious surface that is completely contained and graded toward a drain that discharges either to the sanitary sewer (with approval and appropriate pretreatment), or a holding tank (not into the storm sewer or directly to site soils or groundwater). Alternatively, steam cleaning or pressure washing facilities may have zero-discharge recycling systems equipped with oil/water separators or other treatment devices.

4.4 AGRICULTURE AND BULK MIXING OF FERTILIZERS AND PESTICIDES

Only the application of agricultural chemicals, fertilizers, mineral acids, organic sulfur compounds, etc., as used in routine agricultural operations and applied under the "Generally Accepted Agricultural Management Practices" (GAAMPs) and consistent with label directions approved by the EPA or the Michigan Department of Agriculture & Rural Development are allowed. Lawn, garden, pesticide, and agricultural services with onsite bulk mixing or blending of fertilizers, pesticides, and other industry-related chemicals for commercial application are prohibited in the 1-Year Capture Zones when onsite quantities of these chemicals exceed 55 gallons aggregate for liquid materials or 440 pounds aggregate for dry weights.

The following standards apply to all facilities conducting bulk mixing of fertilizers, pesticides, and related materials within Capture Zones, including existing non-conforming sites in the 1-Year Capture Zones:

- Storage areas shall be designed to protect these chemicals from release to the environment, possible theft, unauthorized use by untrained personnel, and temperature extremes. Outdoor storage areas shall be located within a permanently fenced area and shall have a permanent roof to prevent precipitation and sunlight from entering the storage area. All storage areas shall have an impervious surface and secondary containment. Floor drains shall not be located in storage areas without City approval.
- Pesticides, fertilizers, and similar chemicals shall be stored separately to minimize the possibility of cross-contamination in case of fire or other disaster. Smaller facilities may choose to construct a containment area with multiple storage compartments for pesticides and fertilizers.
- Mixing areas for pesticides shall be located indoors or mixing shall be done at the application site.

Onsite mixing and loading areas shall have spill containment. For liquids, this area shall be curbed, bermed, or sloped to contain spillage and drain into an impermeable liquid-tight containment structure. For non-liquid materials, this area shall be constructed to prevent water from flowing into the containment area.

- Facility piping from bulk storage tanks shall be installed aboveground to facilitate inspection for leaks.
- Truck rinse/cleaning areas shall be conducted within a containment area. The floor must be sealed with a suitable impermeable material. Washing areas shall drain into a watertight containment structure.

4.5 DRY CLEANING FACILITIES

Dry cleaning facilities are prohibited in the 1-Year Capture Zones where possession or control of a regulated substance exceeds 55 gallons aggregate for liquid materials or 440 pounds aggregate for dry weights. The following standards apply to all dry cleaning facilities within the Capture Zones, including existing non-conforming sites in the 1-Year Capture Zones:

- Documentation of compliance with EGLE dry cleaning program regulations shall be provided to the City upon request.
- The dry cleaning area shall be isolated from other site operations.
- Dry cleaners shall provide secondary containment for dry cleaning chemicals and machines containing dry cleaning chemicals. The containment area shall be impermeable and capable of holding 110% of the largest possible spill and shall prevent the spill from reaching the sanitary sewer, storm drains, surface water, groundwater, or soil.
- Air and vapors associated with dry cleaning operations shall not be discharged without treatment that removes associated dry cleaning chemicals.

The following BMPs shall be implemented whenever possible:

- Traditional dry cleaning solvents shall be replaced with petroleum solvents having a flash point greater than 140 degrees and specific gravity less than 1.0. These solvents present a lower fire hazard and are typically less mobile if released to the environment.
- Dry-to-dry machines are preferred to transfer machines because of the elimination of the need to transfer solvent-laden garments from a washer unit to a dryer unit, which reduces solvent vapor loss.
- A hamper enclosure or a room enclosure of impermeable construction shall be installed to reduce solvent release during transfer. Distillation equipment designed to allow still bottoms to be removed without opening the still is preferred.

4.6 FURNITURE STRIPPING OR REFINISHING

The use of a site for furniture stripping or refinishing is prohibited in a 1-Year Capture Zone, if the site possesses a regulated substance exceeding 55 gallons aggregate for liquids or 440 pounds aggregate for dry weight. If the use is allowed consistent with the WP-O Ordinance, all applicable standards contained in this document shall be met.

4.7 SCRAP AND SALVAGE OPERATIONS

Scrap and salvage operations including, but not limited to, those related to auto, appliance, and machine parts are prohibited in the 1-Year, 5-Year and 10-Year Capture Zones. The following Standards apply to all scrap and salvage operations, including existing non-conforming sites within the Capture Zones:

- The site shall be designed to consolidate, contain, and collect differing sources of hazardous substances into manageable point sources. For efficiency, and to prevent contamination of areas not specifically designed for certain activities, the site shall be segregated into specific areas especially equipped for receiving, holding, dismantling, cleaning, inventory, parts storage, core storage, fuel storage, special waste storage, crushing, sales, shipping, receiving, and the office (as applicable to the proposed use). There shall be a logical relationship between these areas so that salvaged materials flow smoothly from area to area and eventually offsite.
- The receiving area shall be designed for temporary storage prior to any dismantling or transfer to a longer-term storage area. This area shall have an impervious surface and be able to sufficiently contain damaged, leaking items. Fluid-containing items, including vehicles, shall be inspected for leaks or unwanted contents at the time of receiving.
- Any fluid removal from salvaged items shall be conducted as soon as possible after receiving the item and shall be performed in an area equipped to drain fluids into appropriate collection containers. Any dismantling of fluid-containing items shall be conducted in an area equipped to drain fluids into appropriate collection containers. The area shall be able to fully contain spills from these containers and the work area.
- Steam cleaning of parts shall be conducted only when absolutely necessary and only in an area capable of fully containing associated wastewater for appropriate disposal.
- The site shall have an established secure area to store certain components of vehicles and other materials that pose special hazards, such as mercury switches, airbags containing sodium azide propellants, lead-acid batteries, tires, and oily rags. The site shall be able to accommodate storage of various fluids, which, depending on items received and processed, could include gasoline, diesel fuel, motor oil, transmission oil, power steering fluid, brake fluid, hydraulic fluid, differential fluid, antifreeze, windshield washer fluid, refrigerants, battery acid, cleaning solvents, and contaminated water. Waste fluid storage areas and containers shall conform to the Standards established in Section 3.4.

- Once all fluids have been drained and there is no possibility of regulated substances being released to the environment, salvaged items may be stored in a long-term storage area until the item is sold or otherwise disposed.
- Scrap vehicles or other units brought into a commercial junk yard must have all fluids removed in accordance with current local, state, and federal regulations before onsite crushing. The crushing area shall be adequately contained to capture any residual fluids.
- Certain parts that can be remanufactured or rebuilt have intrinsic value, unless seriously damaged. These parts are removed and stored prior to being sold and will usually contain fluids and lubricants. Such parts shall be stored on an impervious, contained surface.
- Concrete or asphalt surfaces at junk and salvage yards shall be properly designed to minimize cracking as they age. These surfaces are required to be sealed with epoxy or another chemical resistant material, as necessary.

4.8 MOTOR VEHICLE REPAIR/SERVICE SHOPS AND/OR BODY REPAIR

Motor vehicle repair/service shops and body repair shops are prohibited in the 1-Year Capture Zones where the possession or control of a regulated substance exceeds 55 gallons aggregate for liquid materials or 440 pounds aggregate for dry weights. See the WP-O Ordinance for relevant Use-Specific Standards and other conditions of use.

The following Standards apply to all existing and proposed motor vehicle repair/service shops and/or body repair shops:

- Vehicle repair and service shall be performed indoors, and appropriate containment shall be provided.
- Floor drains in service bays and vehicle washing areas shall either be connected to a holding tank with a gravity discharge pipe, to a sump that pumps to a holding tank, or to an appropriately designed oil/grit separator that discharges to a municipal sanitary sewer.
- Vehicle washing shall be conducted at a commercial car wash, especially when cars only need to be washed occasionally. Onsite vehicle washing shall be performed in accordance with these Standards (see Section 4.2).
- Service bay floors and service pits shall be constructed of concrete and sealed with an impervious material to facilitate clean-up without using solvents.
- Areas where vehicles are stored or repaired shall have provisions for containment of vehicle leaks and shall be paved with an impervious material.
- Parts cleaning and degreasing shall be isolated from other operations, located within a containment

area with no direct access outside the facility, and the floor shall be sealed with a suitable impermeable material.

- Auto body painting shall be done in a separate, secure area with no floor drains.

4.9 PLATING AND ANODIZING

Metal plating, polishing, etching, engraving, anodizing, and similar processes are prohibited in the 1-Year Capture Zones where the possession or control of a regulated substance exceeds 55 gallons aggregate for liquid materials or 440 pounds aggregate for dry weights. The following Standards apply to all existing and proposed plating, polishing, etching, engraving, anodizing, and similar facilities, and the existing non-conforming sites in the 1-Year Capture Zones:

- Facilities shall minimize or eliminate the use of particularly hazardous plating chemicals.
- Plating operations and regulated substance storage and use shall be performed consistent with these Standards. Impervious surfaces and containment shall be provided (Section 3.3).
- All plating operations and storage of regulated substances shall be performed indoors.

4.10 TRUCKING AND BUS TERMINALS

Trucking and bus terminals are prohibited in 1-Year Capture Zones where the possession or control of a regulated substance exceeds 55 gallons aggregate for liquid materials or 440 pounds aggregate for dry weights. The following standards apply to all existing and proposed trucking and bus terminals, including existing non-conforming sites in the 1-Year Capture Zones:

- All parking at terminals shall occur on impermeable surfaces, except where otherwise approved by the City. In Capture Zones, grading to a containment area (holding tank, curbing, etc.) may be required. Large parking areas shall meet the requirements of the Standards presented in this document (Section 5.0).
- If fueling takes place at the terminal, all requirements in Section 3.0 and Section 4.0 shall be followed.
- Vehicle maintenance shall be conducted indoors in a contained area or offsite (see Section 4.8).
- If onsite cleaning of trucks or buses is proposed to be conducted, full containment of wash water is required (see Section 4.2).
- Onsite painting of trucks/buses is not permitted without City approval.
- Regulated substances loading/unloading areas shall meet the requirements of Section 3.2.3.

5.0 STORMWATER MANAGEMENT REQUIREMENTS

The primary objectives of stormwater management in the City are to: 1) achieve pre-development conditions with respect to stormwater runoff rates and volumes in an effort to reduce and control infrastructure surcharging; 2) maintain or increase the quality of surface water and groundwater resources; 3) provide source water protection within Capture Zones; and, 4) maintain compliance with the City's Municipal Separate Storm Sewer System (MS4) Stormwater Program National Pollutant Discharge Elimination System (NPDES) Permit and associated Certificate of Coverage (COC). The quality and sustainability of the City's drinking water (groundwater) and surface water resources depend on the management of stormwater runoff.

The following general strategies for minimizing stormwater volume and improving stormwater quality shall be evaluated for all sites and used at all site plans, where appropriate:

- Accommodate stormwater that complements the natural drainage patterns, maintains the integrity of stream channels for both their drainage and biological functions, and protects wetlands.
- Reduce or maintain impervious surface area.
- Prevent erosion and sedimentation.
- Provide naturalized stormwater treatment for parking lot runoff using bioretention basins, rain gardens, vegetative filter strips, and/or other BMPs that can be integrated into landscaped areas and traffic islands, where allowed and appropriate.
- Direct rooftop runoff to pervious areas such as yards, open areas, or vegetated areas (e.g., rain gardens), thus avoiding rooftop runoff to the roadway and stormwater collection system.
- Use native vegetation, where practical, to reduce the need for chemical applications and enhance plant root absorption of infiltrated stormwater. Non-vegetative stormwater treatment structures will be incorporated if naturalized treatment systems are not practical or consistent with these Standards.
- Maintain or increase onsite storage of stormwater and subsequently groundwater recharge by allowing non-polluted stormwater infiltration in designated areas.

5.1 UNIFORM STORMWATER STANDARDS

Project Site Size - For the purposes of these Standards, a site:

- < ½-acre (21,780 square feet) is considered a "**small site**".
- ≥ ½ acre (21,780 square feet) up to 1 acre is a "**medium site**".
- > 1 acre is considered a "**large site**"; and,
- Parking lot(s) with a cumulative total of ≥ 20 parking places and/or exceeding 6,000 square foot area is considered a "**large parking area**."

Stormwater Runoff Calculations and Associated Information

For all projects/sites, pre- and post-development stormwater runoff calculations shall be determined using the Stormwater Calculations Worksheet available at the following website and the completed form shall be submitted with the site plan: <https://www.kalamazoo-city.org/Business-Development/Project-Review/Apply-for-Site-Plan-Review/Site-Plan-Review-Forms-and-Documents> At the City's discretion this requirement may be waived for the following types of projects/sites, but only when no impacts to stormwater runoff are anticipated: cell tower antenna and equipment mounting/replacement, interior renovations, and sites ≤ 0.25 acres in area.

STANDARD 1: A water quality treatment runoff volume of 1-inch generated from the entire site that contributes to runoff is required for medium sized sites, large sites, and those with large parking areas. The Stormwater Calculations Worksheet calculates this volume in cubic feet by multiplying the site area (square feet) by 1/12 feet (0.083).

For the purpose of selecting the appropriate size of a stormwater Manufactured Treatment Device or other acceptable BMP, the Water Quality Treatment Flow Rate (Q) shall be calculated using the Stormwater Calculations Worksheet which uses the Rational Method Equation: $Q = CiA$, where

- Q = Discharge rate in cubic feet per-second (cfs)
- C = Runoff coefficient depending on the characteristics of the drainage area
- I = Rainfall intensity in inches/hour
- A = Drainage area in acres

The runoff coefficient (C) shall be the weighted average that is based on the percentage of different surface types shown on the Stormwater Calculations Worksheet.

The rainfall intensity (I) shall be equal to a 1-year 30-minute storm (1.65 inches/hour) or the 90% annual non-exceedance storm, whichever is greater, using current data from the nearest National Oceanic and Atmospheric Administration (NOAA) weather station (Kalamazoo State Hosp – Site ID: 20-4244).

The drainage area (A) means the entire upstream land area which drains to and from that location.

In addition:

- The BMP shall be designed to treat 100% of the flow without bypass at the calculated water quality treatment flow rate; and,
- The BMP shall have the capacity to retain floatables and sediment without loss.

Small sites do not require a water quality treatment volume unless water quality discharge is a concern due

to land use characteristics that pose a high risk to water quality. City-approved catch basin inserts may only be used on small sites as a water quality treatment BMP and when hydrodynamic separators and other BMPs are not physically practical due to site characteristics, such as depth to groundwater, hydraulics, etc.

To meet the objective of Standard 1, the BMP selected to treat the water quality volume shall be designed on a site-specific basis to achieve a minimum of 80% removal of Total Suspended Solids (TSS), as compared with uncontrolled runoff, or a discharge concentration of TSS that does not exceed 80 mg/L. Many BMPs are sufficient individually to achieve the required removal of TSS. Compliance can also be achieved through use of a system of BMPs that cumulatively reach the 80% reduction factor. If MTDs are selected as BMPs, they shall be NJCAT verified and NJDEP certified (or better) to satisfy the Water Quality Treatment Volume Standard, unless otherwise approved by the City. The model/size of the certified unit shall be selected on the basis to effectively pre-treat stormwater at the calculated water quality flow rate. The NJDEP 50% Certified TSS Removal Rate approximates 80% net TSS reduction for the Kalamazoo region.

The effective removal of TSS and implementation of other stormwater control strategies by other proposed BMPs will be estimated by reference sources such as: "Low Impact Development Manual for Michigan," SEMCOG, 2008; "Non-Point Source Best Management Practices Manual," EGLE, 2017; and/or other City of Kalamazoo acceptable industry standard technical manuals used for estimating stormwater pollutant load reductions by BMPs. The Uniform Stormwater Standard 1: Water Quality Treatment Volume and MTD Worksheet shall be prepared and submitted to demonstrate compliance with this Standard.

STANDARD 2: A Channel Protection Performance Standard is required to 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 storm or 2.59 inches (whichever is greater), using current data from the nearest NOAA weather station (Kalamazoo State Hosp – Site ID: 20-4244). This standard is required for all sites ≥ 0.5 acre (medium and large sites). If the post-development runoff volume is equal to or less than the pre-development runoff volume, the channel protection performance standard is met. The intent of the Channel Protection Performance Standard is to prevent excess sediment and channel instability caused by the increased rate and volume of stormwater runoff that can result from development. Refer to Section 5.3 for requirements.

STANDARD 3: Stormwater runoff shall be captured and retained/detained properly to protect neighboring properties. The City Engineer or designee will review each site plan for approval on a case-by-case basis to determine if the proposed strategy meets industry standards and is appropriate for the specific site. Specific requirements include: site grading the site such that stormwater is captured onsite and not allowed to flow onto adjoining properties, into streets, across sidewalks, etc.; designing detention and retention systems to drain completely between runoff events; and requiring additional stormwater storage (detention/retention).

STANDARD 4: On large sites, a minimum 25-foot naturally vegetated buffer system shall be incorporated along all perennial streams, wetlands, and other surface water features to protect water quality, reduce erosion and sedimentation, reduce the potential for flooding, and enhance aesthetics and wildlife habitat. On medium sites, a 20-foot buffer is required; on small sites, a 15-foot naturally vegetated buffer is required.

STANDARD 5: All reasonable efforts shall be made to maintain and protect wetlands. If loss cannot be avoided, wetland mitigation shall be accomplished on the same site and be approved by the City and EGLE. Mitigation shall adhere to the standards provided in the Wetland Mitigation Section under Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended — regardless of the size of the wetland. The EGLE permit shall be submitted to the City prior to plan approval.

STANDARD 6: All reasonable efforts shall be made to maintain and protect floodplains. If a loss cannot be avoided, floodplain mitigation at a 1:1 ratio of new floodplain volume to former floodplain volume shall be accomplished within the same stormwater system sub-drainage basin (the land area that drains to a single City outfall) and approved by the City and EGLE. All proposed site work within floodplains shall be approved by EGLE. Permits or other associated correspondence shall be provided to the City prior to plan approval.

STANDARD 7: In all areas, the maximum design flow rate or volume of stormwater discharged from the site shall not impair or exceed the capacity of the downstream stormwater collection system, open channel, watercourse, wetland, or overland flow path. Onsite detention/retention for up to a 100-year 24-hour storm may be required (depending on site location).

STANDARD 8: A Stormwater Management Practices Operations and Maintenance Agreement is required by and between the City of Kalamazoo and the owner of the property that has incorporated stormwater best management practices that include: manufactured treatment devices, retention or detention basins/systems, subsurface infiltration beds, bioretention, vegetated swales, porous pavement, etc.

All treatment and storage BMPs are required to be listed and shown on the Agreement (Attachment 2). When a Landowner is making improvements to the Property that require approval under the City's Site Plan Review process, or is modifying the existing stormwater discharge system on the property that either impacts the City's system or the retention of stormwater on the property, an Agreement is required. As a result of those uses, improvements or modifications, the Landowner agrees: (i) to install and maintain stormwater BMPs on the Property in accordance with approved plans and conditions; and (ii) to ensure that the BMPs continue serving the intended function in perpetuity. The Landowner shall annually submit a report to the City regarding the inspection, operation, and maintenance for each of the stormwater MTDs and other BMPs. The Landowner shall submit one or more of the Stormwater Treatment Inspection Report forms provided in Attachment 4, or a comparable form for a site-specific MTD or BMP.

Table 3
Site Size Applicability to Stormwater Standards

Site Size	Standard 1	Standard 2	Standard 3	Standard 4	Standard 5	Standard 6	Standard 7	Standard 8
Small	-	-	X	15 ft Buffer	X	X	X	X
Medium	X	X	X	20 ft Buffer	X	X	X	X
Large	X	X	X	25 ft Buffer	X	X	X	X

**Small Site < 1/2 acre; Medium Site ≥ 1/2 acre up to 1 acre; Large Site > 1 acre

5.2 STORMWATER DISCHARGE STANDARDS

Stormwater discharge strategies shall be dependent on the sites location relative to Capture Zones, previous and proposed land uses, site zoning designation(s), groundwater contamination risk assessment, potential for onsite soil and/or groundwater contamination; potential impacts to the MS4 and surface water features; and all other relevant physical characteristics of the site. Stormwater discharge strategies have been incorporated into the following City-adopted Stormwater Discharge Standards that shall be used during site development and redevelopment, or as otherwise deemed necessary to maintain regulatory compliance with the City's MS4 NPDES Permit or objectives of the EGLE-approved WHPP. Table 4 summarizes the discharge strategy for different land-use risk designations. Refer to Section 2 for land-use risk designations based on land use and zoning.

STANDARD A: Within 1-Year Capture Zones, sites with high-risk land uses and/or those exceeding 55 gallons aggregate for liquids or 440 pounds aggregate for dry weights, shall discharge to surface water with pretreatment and shall have the required spill containment volume (Section 6.0).

STANDARD B: Within 1-Year Capture Zones, sites with low-risk land uses, shall discharge to surface water with pretreatment. Groundwater infiltration may be allowed if pretreatment is provided, and the site is not contaminated. Large parking areas (refer to Standard E) and regulated substance storage areas are required to have pretreatment and the required spill containment volume (Section 6.0).

STANDARD C: Within 5-Year and 10-Year Capture Zones associated with high-risk land uses and/or those exceeding the 55-gallon/440-pound aggregate thresholds for regulated substances, stormwater infiltration may be allowed with pretreatment and the required spill containment volume, provided the site is not contaminated and adequate containment is provided if regulated substances are stored or used onsite.

STANDARD D: In low-risk land use areas within 5-Year Capture Zones, infiltration is allowed with pretreatment, provided the site is not contaminated and adequate containment is provided if hazardous substances are stored or used onsite.

STANDARD E: Parking areas designed to accommodate 20 or more vehicles or exceed 6,000 square feet (large parking areas) shall be paved with concrete, asphalt, or an equivalent smooth impervious surface with a minimum 1% cross slope to prevent ponding of water. These parking areas shall be graded such that all runoff is directed to a collection system with pretreatment, to minimize the potential for pollutants to migrate offsite or into groundwater.

Parking areas located outside Capture Zones with limited or short-term use (i.e., churches or similar) that exhibit limited potential for release of regulated substances, may be granted exceptions or modifications to the above requirements.

The following applies to existing parking areas:

- If parking lot resurfacing (i.e., mill and fill) is proposed, the parking lot does not typically need to be brought up to current standards unless major issues are identified during plan review.
- If a portion of a parking lot will be reconstructed (full depth Hot Mix Asphalt (HMA)/concrete removal), that portion of the parking lot shall be constructed to current standards (treatment, detention, grading, etc.), and treatment shall be sized appropriately for the entire area contributing to runoff.
- If the entire parking lot will be reconstructed, the entire parking lot shall be constructed to current standards.
- When determining the required stormwater storage volume (detention/retention) for an existing asphalt, concrete, or other parking lot refer to Section 5.3.

STANDARD F: Within 10-Year Capture Zones, stormwater infiltration is preferred with low-risk land uses. Large parking areas require pretreatment.

STANDARD G: In areas outside the Capture Zones, infiltration of stormwater is preferred to promote groundwater recharge. All lots or parcels shall retain and infiltrate stormwater onsite, unless the site is limited to only surface water discharge due to contamination or a shallow groundwater table. Sites with high-risk land uses and those with large parking lots require pretreatment and/or spill containment. Table 4 summarizes the discharge strategies for different land-use risk designations.

Table 4: Stormwater Discharge Strategy
Infiltration to Groundwater and MS4 Connection

Capture Zone	Applicable Standards	High-Risk Land Use¹ and/or Above Quantity Thresholds²	Low-Risk Land Use
1-Year Capture Zones	A, B, E	<ul style="list-style-type: none"> No stormwater infiltration. Pretreatment with spill containment volume³ is required. 	<ul style="list-style-type: none"> Pretreatment is required for stormwater infiltration⁴. Certain parking areas² and all regulated substance areas require pretreatment with spill containment volume³.
5-Year Capture Zones	C, D, E	<ul style="list-style-type: none"> Pretreatment with spill containment volume³ is required for stormwater infiltration⁴. Certain parking areas² and all regulated substance areas require pretreatment with spill containment volume³. 	<ul style="list-style-type: none"> Stormwater infiltration allowed pending site-specific evaluation⁴. Pretreatment is required for stormwater infiltration. Certain parking areas² and all regulated substance areas require pretreatment with spill containment volume³.
10-Year Capture Zones	C, E, F	<ul style="list-style-type: none"> Stormwater infiltration allowed pending site-specific evaluation⁴. Certain parking areas² and all regulated substance areas require pretreatment with spill containment volume³. 	<ul style="list-style-type: none"> Stormwater infiltration preferred pending site-specific evaluation⁴. Certain parking areas² and all regulated substance areas for large sites require pretreatment.
Outside Capture Zones	E, G	<ul style="list-style-type: none"> Stormwater infiltration preferred pending site-specific evaluation⁴. Certain parking areas² and all regulated substance areas for large sites require pretreatment and/or spill containment volume³. 	<ul style="list-style-type: none"> Stormwater infiltration preferred pending site-specific evaluation⁴. Certain parking areas² for large sites may require pretreatment.

¹ See Tables 1 and 2 for High-Risk Land Use designations. Sites with "Moderate Risk" shall be evaluated on a case-by-case basis.

Regulated Substance Thresholds: 55 gallons aggregate for liquids and 440 pounds aggregate for dry weights.

² 20 or more parking spaces or >6,000-square-foot paved area.

³ See Section 6.0 for requirements.

⁴ See Section 5.4 for Infiltration Requirements.

5.3 DETENTION / RETENTION

Onsite storage (retention and/or detention) of stormwater is required at all sites ≥ 0.5 acre and may be required at small sites (< 0.5 acre), consistent with Standards 3 and 7. All detention and retention systems shall be designed to fully drain between runoff events, and if connected to the City's storm sewer system (MS4), shall have a controlled release structure with an appropriately sized orifice at an elevation corresponding to the lowest elevation of the storage system (if the system does not infiltrate) and an overflow with an elevation corresponding to the top of the storage system. If pretreatment and underground storage are proposed, pretreatment shall be upstream to the storage system.

The required storage volume shall be determined by calculating the difference between the pre-development and post-development runoff volume and rate using the Rational Method for the 2-year 24-hour storm (unless the City requires a higher volume or intensity design storm, such as, Natural Features Protection areas and Standard 3 and 7 areas). If the post-development volume or rate exceeds the existing volume or rate, then appropriate controls shall be implemented to make post-development runoff volume and rate equal to or less than pre-development conditions for all storms up to the required design storm.

When determining required detention or retention volumes, "pre-development" conditions shall be 100% forested for all sites; and developed sites with existing impervious coverage (or impervious coverage that existed within 5 years of plan-submittal) may apply up to a 50% credit (allowance) for existing impervious coverage, where allowed (**example:** if a site is 100% impervious, existing conditions shall be 50% forested and 50% impervious). Stormwater calculations shall be submitted with the plans to demonstrate compliance with this requirement.

General Detention/Retention Requirements:

- Existing ("pre-development") conditions shall be 100% forested with a maximum 50% credit for existing impervious coverage when calculating the pre-development runoff conditions for sites with existing impervious coverage.
- Storage (detention/retention) systems shall fully drain between runoff events.
- For sites where connection of a controlled release structure/overflow to the MS4 is not feasible, the site shall provide onsite detention and infiltration for a minimum 10-year 24-hour storm, where feasible.
- For sites where new roofs, eaves, gutters, and/or downspouts are proposed, storage shall be provided, where feasible, and runoff shall NOT be directed toward streets, sidewalks, or adjoining properties (without a drainage agreement between Landowners).

5.4 INFILTRATION

Infiltration of stormwater is preferred at all sites; but is dependent on previous and proposed land use(s), zoning designation, site location relative to capture zones, and whether the site is contaminated. Infiltration shall be allowed at sites on a case-by-case basis following City review of site-specific data. If infiltration is proposed, the following shall be provided to the City for review to determine if infiltration will be allowed:

- **For all sites:**
 - Soil borings shall be advanced in proposed infiltration areas at the proposed infiltration depth(s) and soil boring logs shall be submitted to the City for review;
 - Site soil(s) shall be conducive to infiltration;
 - Infiltration through potentially contaminated fill materials/soil or contaminated soil and/or groundwater is NOT allowed, unless sampling data which indicates the soil and/or groundwater is not contaminated is provided to the City;
 - Contaminated or potentially contaminated soils may be removed and properly disposed to facilitate infiltration at a site, provided that groundwater beneath the site is not contaminated; and,
 - If available or the City determines it relevant, environmental reports (Phase I ESA, Phase II ESA, BEA, etc.) shall be provided to the City for review.
- **For sites within Capture Zones** (where infiltration is allowed, pending site review):
 - If the City deems it necessary, soil and/or groundwater samples shall be collected from proposed infiltration areas (at the proposed infiltration depth(s)) and analyzed for any potential chemicals of concern (typically volatile organic compounds (VOCs), polynuclear aromatics compounds (PNAs) and Michigan 10 Metals) to ensure that the proposed infiltration will not exacerbate existing onsite contamination.

5.5 NATURAL FEATURES PROTECTION AREAS

Natural Features Protection (NFP) Areas exist throughout the City. These areas have additional stormwater management requirements. These requirements are outlined in the City's NFP Overlay Standards Ordinance (§ 50-6.2). To determine if a site is located in an NFP area, refer to Figure 2 and/or the City's online GIS (<https://www.kalamazoo.org/maps>) under the Planning & Zoning Layer.

The NFP Overlay District is intended to protect natural features in the City, specifically wetlands; water resources; trees; woodlands; floodplains; slopes; natural heritage areas; and habitat corridors.

The following are general stormwater management requirements for all developed and undeveloped sites within NFP Areas:

- Wellhead Protection Overlay 10-Year use restrictions apply in all NFP areas;
- Wellhead Protection Overlay 1-Year use restrictions apply within 500 feet of a water resource or wetland;
- Stormwater BMP installation is prohibited within specified setbacks for wetlands, slopes, etc.;
- Stormwater BMPs shall count at a ratio of two square feet of BMP to one square foot of pervious coverage ratio or at a rate of 50%;
- Parcels 1/2 acre or greater shall maintain the post-development project site runoff volume and peak flow rate at or below pre-development levels for all storms up to the 10-year 24-hour storm;
- Water quality treatment runoff volume standard. The first 1-inch of runoff generated from the entire parcel must be treated using one of the following:
 - o Multiple methods. Two or more BMPs shall be utilized with at least 25% of the required runoff volume treated by BMPs from the Low Impact Development Manual for Michigan, Table 7.1 BMP Matrix Table from Runoff Volume/Infiltration and Runoff Volume/Non-infiltration Categories.
 - o Underground methods. All required runoff shall be treated by underground detention or infiltration BMPs.
 - o Non-infiltration methods. Sites requiring non-infiltration BMPs, such as those with contamination or within Wellhead Protection Overlay, use BMPs from Low Impact Development Manual for Michigan, Table 7.1 BMP Matrix Table, Runoff Quality/Non-infiltration Category.

This list is not intended to be all inclusive and the ordinance should be reviewed and implemented during plan development.

6.0 TREATMENT AND SPILL CONTAINMENT

Acceptable types of BMPs that can meet treatment, storage, and spill containment requirements for stormwater quality can be found in the following documents: Low Impact Development Manual for Michigan (SEMCOG, 2008), Michigan Nonpoint Source Best Management Practices Manual (EGLE, 2017), and other available reference materials and manuals. A Stormwater Operations and Maintenance Agreement (Attachment 2) between the City and the Landowner or designee is required for all treatment and spill containment BMPs.

Maintenance responsibility shall be vested with the owner or authorized operator. At a minimum, a maintenance plan shall include the following components:

- Annual inspection of all onsite treatment, storage and spill containment BMPs, including catch basins, underdrains and outlets.
- Sediment shall be removed when it reaches a depth equal to 10% of the required detention/retention/containment volume or 30% of the sump volume for catch basins and MTDs.
- Maintenance, repair or filter media replacement shall occur when the BMP is not functioning properly (e.g., water not infiltrating, inadequate contaminant removal, plugged/broken piping, etc.).
- If a pollutant spill occurs, spilled materials and all impacted surfaces and media shall be properly cleaned, removed, disposed and/or replaced.
- Eroded and barren areas shall be re-vegetated as soon as possible. Trash and debris shall be removed on a regular schedule.

Spill Containment Volume

Stormwater spill containment may be required as an additional component of pretreatment to protect both surface water and groundwater from pollutant spills/discharges. Spill containment is required to protect both groundwater and surface water from pollutant spills at the following:

- All sites within 1-Year Capture Zones with high-risk land Use(s), large parking areas, or regulated substances;
- Certain sites within 5-Year and 10-Year Capture Zones with high-risk land use(s);
- Sites above regulated substance thresholds within all Capture Zones; and,
- Sites with high-risk land use(s) or above regulated substance thresholds, regardless of proximity to Capture Zones, if deemed appropriate to safeguard environmentally sensitive areas, including but not limited to surface water.

The minimum required Spill Containment Volume is equivalent to 30% of 0.5 inch of runoff per impervious acre (30% of 1,815 cubic feet). The spill containment volume is given by the following equation:

$V = \text{Spill Containment Volume}$

$V = 0.3 (1,815 \text{ ft}^3 \text{ per impervious ac.}) = 544.5 \text{ ft}^3 \text{ per impervious ac.} = 4,073 \text{ gallons per impervious ac.}$

A minimum spill containment volume of 400 gallons shall be provided. The minimum volume is allowable only on small sites without large parking areas. The minimum required spill containment volume for existing developed sites shall be calculated using the proposed development/redevelopment area of the site, unless the City determines that greater containment volume is required.

In general, measures meeting spill containment standards shall have an impermeable barrier between the contained material and underlying soil/groundwater, have provisions for the capture of oil, grease, and sediments; and meet the volume requirement. Spill containment may be provided by one or more of the following BMPs:

- Spill Containment Cell
- Water quality swale
- Proprietary stormwater treatment system
- Interceptor tank (where allowed), or
- Other devices, as approved by the City.

6.1 SPILL CONTAINMENT CELL

A spill containment cell may be used to trap and localize incoming sediments and to capture slug pollutant loads from accidental spills of regulated substances. A spill containment cell (Figure 3) shall have the following characteristics, unless otherwise approved by the City:

- The spill containment cell shall be a wet basin with an impermeable bottom and sides to the design high-water level.
- The minimum surface area shall be 25% of the required volume.
- The length-to-width ratio shall be a minimum of 3:1 and a maximum of 4:1 to allow for adequate hydraulic length, yet minimize scour velocities.
- The minimum hydraulic length shall be equal to the length specified in the length-to-width ratio.
- The minimum diameter of the transfer pipe, between the spill containment cell and downstream infrastructure, shall be 12 inches or sized for the highest intensity 10-year storm (minimum), whichever is greater.

- The overflow structure from the spill containment cell shall be sized for the peak inflow from the highest intensity 10-year storm (minimum).
- The spill containment cell shall have a minimum one-foot-deep sump below the inlet pipe for sediment accumulation.
- The outlet pipe shall be designed to draw water from the central portion of the water column within the cell, to trap floatables, and to contain sediment. The crown of the outlet pipe shall be located vertically, a minimum of 1 foot below the normal water level and a minimum of 1.5 feet from the bottom of the spill containment cell (minimum depth of the permanent pool is 2.5 feet if a snout style outlet pipe is used).
- The bottom and sides shall be lined with a minimum 60 mil thick impermeable liner or minimum 18-inch thick clay liner with maximum hydraulic conductivity less than or equal to 10^{-7} cm/sec.
- The liner material and all other construction materials shall be chemically compatible with regulated substances that are stored, used, transferred or manufactured onsite.

6.2 WATER QUALITY SWALES

Figure 4 depicts a dimensioned water quality swale. Water quality swales may be used for treatment and/or spill containment. If used for spill containment, the water quality swale shall be designed to contain the spill containment volume without release. If the water quality swale receives runoff from a high-risk land use or zoning district, the owner/operator shall indicate in the site's SCP actions to be taken to contain the spill prior to it leaving the downstream manhole/catch basin.

The following is a summary of required characteristics of a water quality swale:

- A minimum 25-foot vegetated buffer is required between directly contributing impervious surfaces and the water quality swale.
- The swale and outlet shall be sized for the highest intensity 10-year storm (minimum).
- Perforated underdrain pipe(s) shall be bedded in coarse aggregate (river rock or similar – MDOT 4A, 6A, etc.).
- Inlets shall have a riprap apron to dissipate the velocity of incoming stormwater runoff.
- The swale shall have a minimum bottom width of 2 feet.
- Side slopes shall be 3:1 (horizontal : vertical) or flatter.
- The sand filter shall be minimum 24 inches thick, and the sand filter media shall meet MDOT Class II or III requirements for granular materials.
- Filter fabric shall be nonwoven geotextile.

- The bottom and sides of the swale shall be lined with a minimum 60 mil thick impermeable liner or minimum 18-inch-thick clay liner with maximum hydraulic conductivity less than or equal to 10^{-7} cm/sec.

6.3 STORMWATER MANUFACTURED TREATMENT DEVICES

Manufactured Treatment Devices (MTD) shall be identified on the plans and manufacturer's documentation shall be provided which verifies that the MTD will function as required. Acceptable proprietary stormwater treatment systems shall be NJCAT verified and NJDEP certified, or better, and shall be approved by the City. Proprietary stormwater treatment systems can be used alone or in combination with other BMPs to meet treatment and spill containment requirements.

Catch Basin / Inlet Inserts

Only small sites are allowed to use City-approved catch basin/inlet inserts that provide treatment through vertical (gravity-based) flow only. These systems require a suitable treatment media (filter) for the subject contaminants of concern at the subject site. Typically, these systems are used on small high-risk sites (e.g., gasoline stations or large parking lots) where larger devices are not practical. The inserts shall be capable of treating the first 1-inch of rainfall (the first flush) and shall have the capacity to allow flows from the highest intensity 10-year storm to pass without causing surface ponding.

Other Devices

Other devices may be approved for treatment and/or spill containment on a case-by-case basis, provided they meet the minimum requirements presented in these Standards, including but not limited to, the required minimum: TSS removal, treatment volume, spill containment volume, and/or flow rate(s). A device with a snout style outlet designed to contain sediment, floatables, and substances with a specific gravity less than 1.0 is an example of a device that may be approvable, provided the minimum requirements are met for the application. Test results and/or detailed calculations for the proposed device that demonstrate compliance with these Standards shall be provided.

7.0 NON-CONFORMING LAND USES

A non-conforming use is defined as any existing use that, as of the effective date of the WP-O Ordinance (2007), would otherwise be prohibited within a designated Capture Zone.

7.1 CONFORMANCE WITH STANDARDS

Existing non-conformities will be allowed within a Capture Zone only if in accordance with Chapter 9 "Non-conformities" of Appendix A (Zoning Ordinance) of the City of Kalamazoo's Code of Ordinances. Non-conforming land uses pursuant to the WP-O Ordinance shall meet the requirements of the Standards established in this document and/or shall prepare a Water Programs Manager-approved Spill Contingency Plan. The City reserves the right to approve/determine which option(s) is to be implemented for the specific circumstance.

Proposed development/redevelopment at existing non-conforming sites shall at a minimum meet or exceed the Standards presented herein, to bring the redeveloped portion of the site into compliance with current Standards. The City encourages all portions of the site to be brought into compliance during redevelopment activities and may require deficiencies beyond proposed project boundaries (redeveloped areas) to be brought into compliance prior to plan approval, depending on the severity of the deficiency(s) and associated risk(s).

7.2 SPILL CONTINGENCY PLANNING

A Spill Contingency Plan or equivalent environmental contingency plan shall be prepared and provided to the City for all existing and proposed sites that generate, store, use, transfer, or manufacture regulated substances in quantities exceeding 55 gallons aggregate for liquids or 440 pounds aggregate for dry weight, and an SCP may be required if the proposed land use poses a direct or potential significant adverse impact to a wellfield or surface water feature. SCPs or equivalent plans for the site may be submitted to the Water Programs Manager for review and approval to meet these requirements.

7.2.1 REGULATED SUBSTANCE INVENTORY

The City's Department of Public Services and Department of Public Safety collaborate in the collection of chemical storage information for the purposes of the Wellhead Protection Program, Stormwater Management Program, and the Fire Fighters Right-to-Know Program. For this purpose, a Chemical Inventory and Storage Form is required to be completed and submitted for review prior to site plan approval. Refer to Attachment 3 for a copy of the form or download at <https://www.kalamazoo.org/Business-Development/Project-Review/Apply-for-Site-Plan-Review/Site-Plan-Review-Forms-and-Documents>. The completed document may be submitted to the Water Programs Manager at:

Water Resources Division - Department of Public Services
ATTN: Water Programs Manager
1415 N. Harrison Street, Kalamazoo, MI 49007

An inventory of all regulated substances stored at the site shall be provided to the City and maintained by the Landowner or their designee. For each regulated substance, the inventory shall identify the type of storage container, storage location(s), and typical and maximum storage quantities in each storage location. The site shall maintain a file of current Safety Data Sheets (SDS) that includes the hazardous components and percentage by weight of each regulated substance. This SDS file shall be readily accessible in the event of an emergency.

Whenever possible, sites shall select non-hazardous or less-hazardous chemicals. Materials such as oils should be standardized throughout a site to reduce the quantity of leftover material and mixed waste. Practices that minimize waste generation are encouraged.

7.2.2 RELEASE POTENTIAL ANALYSIS

The site shall develop a written analysis of the potential for a release of each regulated substance stored at the site. This analysis shall consider the potential for release during transfer of the regulated substance to and from the storage area, during storage of the regulated substance, and during use of the regulated substance. In addition, the site plan shall evaluate the likely size of a release for each scenario, as well as the likely destination of the release (e.g., to a floor drain, sump, storm drain, etc.). This information shall be compiled in table form for ease of data compilation and use.

7.2.3 RELEASE PREVENTION MEASURES

Considering each potential release scenario, the SCP shall identify release prevention measures that will minimize the likelihood and/or reduce the impact of a release. These measures could include work practices, housekeeping practices, inspection practices, and/or structural controls (e.g., secondary containment). Prevention measures shall be included in the SCP.

7.2.4 RELEASE RESPONSE PROCEDURES

The SCP shall identify procedures to be followed in the event of a release of a regulated substance. Written procedures shall be established both for minor releases, which pose no danger to human health or the environment and can be handled by trained employees in the immediate vicinity of the release, and for releases that have one or more of the following characteristics:

- The spill cannot be contained safely by site personnel.
- The spilled material has entered site soils or a vegetated area.
- The spilled material has left the site and has entered the site's drain system, sanitary sewer, storm sewer, surface water, etc.

In addition, the SCP shall include the following:

- Identification of various site personnel's responsibilities in the event of an emergency.
- Internal site emergency notification procedures (chain-of-command reporting).

- Emergency contact information, including, at a minimum:
 - Key site personnel and emergency coordinators, including at least one 24-hour emergency contact.
 - Local emergency response agencies (e.g., police department, fire department, ambulance).
 - Local, state, and federal agencies, including the City of Kalamazoo Environmental Programs Coordinator, EGLE, EPA, and National Response Center.
 - Local spill response contractor(s) able to respond in the event of a significant spill.
- An inventory of onsite spill response equipment and locations.
- Facility maps, evacuation routes, muster points, etc.
- Routine personnel safety and spill response training.

The SCP shall also include procedures for characterization and disposal of waste generated by a release:

7.2.5 USE OF OTHER EMERGENCY RESPONSE PLANS

Many sites using or storing regulated substances are required under state and/or federal law to develop a written spill response plan, such as a Pollution Incident Prevention Plan (PIPP), Spill Prevention Control and Countermeasure (SPCC) Plan, RCRA Contingency Plan and/or Stormwater Pollution Prevention Plan (SWPPP). Provided that all of the elements described above are included in one or more existing emergency response plan, the site may substitute the existing plan(s) for the SCP. If the existing plan(s) addresses part, but not all, of the requirements, the site may prepare an addendum to the existing plan(s) so that all requirements are met.

8.0 POTENTIALLY APPLICABLE ENVIRONMENTAL REGULATIONS

Facility operators subject to regulation under the WP-D Ordinance and these Performance Standards shall comply fully with all existing applicable local, state, and federal regulations in addition to any of the requirements herein. These other requirements may include, but are not limited to, material storage, spill prevention, recordkeeping, emergency response, transport, and disposal of hazardous substances, hazardous wastes, liquid industrial waste, or other potentially polluting materials. No discharge to surface water or groundwater, including direct or indirect discharges of waste, waste effluent, wastewater, pollutants, or cooling water, shall be allowed without approval from local county, state and federal agencies. The project and related improvements shall be designed to protect land and water resources from pollution, including pollution of soils, groundwater, rivers, streams, lakes, ponds, and wetlands.

The State of Michigan regulates specific items as part of their environmental regulations pertaining to proper management of regulated substances. These include but are not limited to: underground and above-ground storage tanks; oil and other polluting materials material storage above state-specified thresholds; spill response plans; solid and liquid waste discharges and disposal; hazardous waste generation, handling, storage and disposal; groundwater discharge; surface water discharge; stormwater discharges into waters of the state; management of contaminated properties; and response and reporting upon discovery of contamination.

9.0 CONTAMINATED PROPERTIES

If the subject property contains soil and/or groundwater contamination, site-specific requirements may apply. See the EGLE Post-Construction Storm Water Runoff Controls Program Compliance Assistance Document (EGLE, 2014) for specifics regarding stormwater: https://www.michigan.gov/documents/deq/wrd-storm-MS4-ComplianceAssistance_470350_7.pdf.

Contact the Kalamazoo District EGLE Office for answers to questions regarding state environmental regulations pertaining to contaminated sites:

7953 Adobe Road, Kalamazoo, MI 49009-5025

Phone: (269) 567-3500

Fax: (269) 567-9440

9.1 PART 201, ENVIRONMENTAL REMEDIATION (EXCERPT)

Part 201 of Michigan Act 451 regulates sites of environmental contamination in Michigan. Under Part 201, a person who owns or operates a contaminated property is responsible for taking certain actions to address the contamination if they have caused said contamination. EGLE's Remediation and Redevelopment Division (RRD) response activities for a Part 201 site are identified on the EGLE website: https://www.michigan.gov/egle/0,9429,7-135-3311_4109_9846--,00.html. Additionally, Part 201 requires persons (liable or non-labile) who own or operate contaminated property to exercise "due care" with respect to the property's contamination to ensure that the contamination does not cause unacceptable exposures, and the contamination is not exacerbated or worsened. These due care obligations ensure that a property is used in a way that protects public health and safety and does not exacerbate the contamination. EGLE's Remediation and Redevelopment Division response actions for a Part 201 site are identified on their website: https://www.michigan.gov/egle/0,9429,7-135-3311_4109_59851--,00.html. In most situations, due care obligations apply even if the owner, operator and/or lessee are not responsible for the site's contamination. Due care obligations for owners and operators of contaminated properties include:

- Preventing exacerbation of the contamination by causing the contamination to migrate beyond the boundaries of the property or increasing response costs at the property.
- Preventing human exposure to hazardous substances, if existing conditions at the property will result in unacceptable exposure levels (e.g., direct contact or vapor intrusion/inhalation).
- Notifying the fire department of fire and explosion hazards, as well as mitigating these hazards.
- Taking reasonable precautions against the foreseeable actions of other people that could exacerbate the contamination or cause them to be exposed to contamination.
- Reporting discarded or abandoned containers to the EGLE.

- Providing Notice of Offsite Migration of the contamination to downgradient Landowners and EGLE.
- Providing notice to utility holders at the property of the presence of the contamination.
- Preparing documentation of compliance with due care obligations, such as a Due Care Plan.

Part 201 also establishes liability protection for buyers of contaminated property who prepare and file a Baseline Environmental Assessment (BEA) with EGLE. A BEA is an evaluation of environmental conditions at the property at the time of purchase, occupancy, or foreclosure. BEAs include sufficient information about the property such that a new release at the property can be distinguished from an old release. A buyer is required to conduct a BEA prior to or within 45 days after becoming the owner or operator of a contaminated facility. Information for conducting a BEA is provided at: https://www.michigan.gov/egle/0,9429,7-135-3311_4109_4212--,00.html.

9.2 PART 213, ENVIRONMENTAL REMEDIATION (EXCERPT)

The discovery of a release from an underground storage tank (UST) triggers several critical reporting requirements. EGLE's RRD response activities for a Part 213 site are identified on their website: https://www.michigan.gov/egle/0,9429,7-135-3311_4109_4215--,00.html. The owner/operator of the offending tank must:

- Notify EGLE of the release within 24 hours. If you are not sure where you need to report, immediately call the Pollution Emergency Alerting System (PEAS) at (800) 292-4706.
- Owners/operators are required to hire consultants that meet the qualifications provided in Part 213 to perform corrective actions, and to submit specific reports required by the statute in accordance with the use of Risk-Based Corrective Action (RBCA).
- Submit an initial assessment report to EGLE, within 90 days, which describes all initial abatement steps taken at the site.
- Submit to EGLE a Final Assessment Report and Corrective Action Plan, which must describe the extent of contamination and action(s) that will be undertaken to remediate the site, including a schedule for the remediation.

Initial Response Actions

After a release has been reported under the 24-hour notice requirement, the UST owner or operator must "immediately and expeditiously" perform certain initial abatement activities. Specifically, UST owner/operators are expressly required to:

- Identify and mitigate fire, explosion, and vapor hazards.
- Prevent further releases, including removal of product from the leaking UST system.

- Identify and recover light non-aqueous phase liquid (LNAPL) (i.e., gasoline or diesel fuel product). If LNAPL is first discovered after the initial 24-hour release report, the discovery of LNAPL must be reported to the EGLE within 24 hours of discovery.
- Excavate and either contain, treat, or dispose any visibly contaminated soil that is likely to cause a fire hazard, spread or increase the cost of corrective action.
- Take any other action necessary to abate any immediate threat.

9.3 PUBLIC INFORMATION REPORTING – ILLICIT DISCHARGES OR SPILL RELEASES

If hazardous substances, LNAPL or any other contamination is known or suspected to have migrated or discharged to a City-owned utility or corridor, or caused an illicit stormwater discharge, the City shall be immediately contacted to abate or remedy any potential public health and safety risks including but not limited to, vapor inhalation, fire, explosion, direct contact, discharge to a surface water body and/or impact to groundwater drinking water supplies.

In an emergency, call 911 or contact the Kalamazoo Public Safety Central Dispatch (269) 337-8994 immediately.

During regular business hours, reports from the public regarding contaminant spills, illicit discharges and connections are typically made to the City's Call Center at 311 or (269) 337-8000.

The Water Programs Manager can also be contacted at:

Water Resources Division – Department of Public Services
 ATTN: Water Programs Manager
 1415 N. Harrison Street, Kalamazoo, MI 49007

Additional EGLE Release Reporting information is available on their website at <https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Spill-Release-Reporting/Release-Reporting-Requirements.pdf>.

If hazardous substances, LNAPL or any other contamination is known or suspected to have migrated or discharged to a to a surface water body (i.e., lake, river, creek or wetland) in a quantity equal to or greater than its corresponding reportable quantity contact the following:

- Pollution Emergency Alerting System (PEAS) at (800) 292-4706;
- National Response Center (NRC) at (800) 424-8802 or <http://www.nrc.uscg.mil/>, and/or
- MDARD Agriculture Pollution Emergency Hotline at (800) 405-0101.

10.0 DEFINITIONS

Best Management Practice (BMP): The best available methods, activities, maintenance procedures, technologies, operating methods or management practices for preventing or reducing the quantity of Regulated Substances entering groundwater and surface water from a particular land use activity.

Bioretention (Rain Gardens): Shallow surface depressions planted with specially selected native vegetation to capture and treat stormwater runoff from rooftops, parking lots, and streets.

Buffer Strip: A permanent, maintained strip of vegetation designed to slow runoff velocities and filter out sediment and other pollutants from stormwater.

Capture Zone: That area through which water travels below the surface and reaches a City well or wellfield within a specified period of time (under specified conditions set by the MDEQ). This ordinance addresses both a one-year and ten-year time-of-travel capture zone.

Catch Basin: A solid-walled stormwater inlet to the stormwater collection system that includes a sump to capture coarse sediments. Catch basin sumps shall be at least two feet deep.

Channel Protection Performance Standard: Criteria that requires maintaining 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.

Contaminated Site (or Contamination): A site that exhibits contaminant concentrations that are greater than State and/or Federal clean-up standards (e.g., Michigan Part 201 Criteria, Part 213 Risk-Based Screening Levels, etc.).

Detention (Basin/Pond/ System): A stormwater management practice that provides temporary storage for stormwater runoff before discharging into a surface water body.

EGLE: Michigan Department of Environment, Great Lakes, and Energy; formerly Michigan Department of Environmental Quality (MDEQ).

EPA: United States Environmental Protection Agency

First Flush: Typically, the first one inch of runoff generated from a site. The "first flush" typically contains higher pollutant concentrations than subsequent runoff from the same runoff event.

Green Roof: Rooftop that includes a vegetative surface that allows the roof to function more like a vegetated surface.

Groundwater: The water below the land surface in a zone of saturation, excluding those waters in underground piping for water, wastewater, or stormwater distribution/collection systems.

Groundwater Recharge: The replenishment of existing natural water bearing subsurface layers of porous stone, sand, gravel, silt or clay via infiltration.

Illicit Discharge: Any direct or indirect non-stormwater discharge (or seepage) to the stormwater system that is not composed entirely of stormwater or uncontaminated groundwater.

Impervious Surface: A surface that prevents the infiltration of water into the ground such as roofs, streets, sidewalks, driveways, parking lots, and highly compacted soils.

Infiltration Practices: Natural or constructed land areas using permeable soils that capture, store, and infiltrate the volume of stormwater runoff into surrounding soil. Examples include, but are not limited, to dry wells/leaching basins, retention basins, detention basins, infiltration trenches, and subsurface infiltration beds.

LARA: Michigan Department of Licensing and Regulatory Affairs

Manufactured Treatment Devices (MTDs): A prefabricated stormwater treatment structure utilizing settling, filtration, adsorptive/absorptive materials, vortex separation (hydrodynamic separator), vegetative components, and/or other appropriate technology to remove pollutants from stormwater runoff.

Michigan 10 Metals: arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc

MS4: Municipal Separate Storm Sewer System, as defined by federal and state laws.

NPDES: National Pollution Discharge Elimination System, as addressed in 33 USC § 1342 (b) and the Federal Clean Water Act, as amended.

NPDES Stormwater Discharge Permit: A permit issued by the U.S. Environmental Protection Agency (EPA) (or a state under authority delegated pursuant to 33 USC section 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis. For the purposes of this ordinance, the subject NPDES Permit is issued to the City by the EGLE.

New Jersey Corporation for Advanced Technology (NJCAT) Program: A private/public partnership that promotes the development and commercialization of new energy and environmental technologies, including the verification of stormwater MTDs.

New Jersey Department of Environmental Protection (NJDEP) Standard for Manufactured Treatment Devices: A list of third-party certified Manufactured Treatment Devices (MTDs) that were laboratory and/or field tested by the NJCAT Program and approved by the NJDEP to serve as acceptable BMPs. The most current listing available will be used as the list of acceptable MTDs for use in the City of Kalamazoo for removing pollutants from stormwater runoff (<https://www.nj.gov/dep/stormwater/treatment.html>).

Peak Discharge Rate: The maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.

Pervious Pavement: Infiltration technique that combines stormwater infiltration, storage, and structural pavement consisting of a permeable surface underlain by a storage reservoir.

Pollutant: Any substance which, alone or in combination with other substances, if discharged to waters of the State in sufficient quantities, causes or contributes to, or has the potential to cause or contribute to, a violation of a Federal, State, or local water quality standard, a nuisance, or to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, industrial, agricultural, recreational, or other legitimate beneficial uses or to any organism, aquatic life, plant or animal. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; sediment; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

PNA: Polynuclear Aromatic Compounds

Pre-development Conditions: The natural state of a site prior to any human development activities. For most sites in the City, pre-development conditions shall be 100% forested.

Pretreatment: The additional measures taken to protect groundwater and/or surface water quality by removing pollutants from collected stormwater. Typically, pretreatment is accomplished by a BMP designed to provide controlled removal of oils and grease, coarse to fine sediments, and may provide containment in the case of an accidental spill or other release.

Release: The spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of one or more regulated substances upon or into any land or water within a capture zone. Release includes, without limitation, leakage of such materials from failed or discarded containers or storage systems and disposal of such materials into any on-site sewage disposal system, dry-well, catch basin, or landfill.

Regulated Substance (Hazardous Substance): Substance for which there is a Safety Data Sheet (SDS), as established by the United States Occupational Safety and Health Administration, and the SDS cites possible health hazards for said substance; Hazardous waste as defined by the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended; Hazardous substances as defined by the Comprehensive Environmental Response, Compensation and Recovery Act (CERCLA); radiological materials; and biohazards (See WP-O Ordinance for exclusions in Section 1.B, Definition of Regulated Substances).

Retention (Basin, Pond, System): A stormwater management practice that provides temporary storage of stormwater runoff and does not discharge directly to a surface water body. The water is discharged via infiltration and/or evaporation.

Runoff: That portion of precipitation that does not infiltrate or evaporate but runs off to a surface water feature or stormwater collection system.

Sediment Basin: A man-made depression in the ground surface where runoff is collected and stored to allow solids to settle out. Sediment basins may be wet or dry.

Spill Containment Cell: A BMP designed to provide controlled removal of oils and grease, coarse to fine sediments, and other subject pollutants to protect groundwater and surface water resources; and to provide for a containment area in the case of a spill or other pollutant release.

Spill Containment Plan: A written site-specific plan conforming to the specifications contained in the "Performance Standards," including the documentation of general site operations; Regulated Substance storage areas; potential for releases of Regulated Substances and an analysis of the potential destination of such releases; and procedures to be followed in the event of a release.

Spill Containment Volume: The containment volume of stormwater required to protect groundwater and surface water from a release of regulated substances.

Stormwater: Runoff from natural precipitation, including snowmelt, as well as other surface runoff and drainage that flow via natural or manmade drainage ways.

Sump: An area or space where liquids are allowed or encouraged to accumulate. Sump pumping is the process of evacuating that liquid using pumps.

Vegetated Filter Strip: A permanent, maintained strip of vegetation designed to slow runoff velocities and filter out sediment and other pollutants from stormwater.

VOCs: Volatile Organic Compounds

Water Quality Swale: An open drainage channel or depression, explicitly designed to filter runoff through a self-contained bed of sand to provide water quality treatment and/or spill containment.

Water Quality Treatment Volume Standard: Criteria that requires a stormwater treatment volume that is intended to reduce or prevent water quality impacts of stormwater runoff by capturing and treating the initial "first flush" volume expected to contain the majority of pollutants.

Wellfield: The surface or subsurface area surrounding one or more permitted wells where potable water is pumped out of the ground to supply a public water system. They are further categorized into wellfield zones based on the time it takes water in the aquifer to travel to the wellhead where it is pumped out.

Wellhead: Any individual well used for supplying water.

Wellhead Protection Area: The surface or subsurface area supplying water to wells or wellfields through which contaminants are reasonably likely to move toward and reach the well(s); The area defined by the Capture Zone.

11.0 REFERENCES

City of Kalamazoo Code of Ordinances: <https://ecode360.com/KA2666>.

City of Kalamazoo Website: <https://www.kalamazoo-city.org/>.

Kalamazoo County Office of Drain Commissioner:

<https://www.kalcounty.com/drain/SiteDevelopmentProcedures.htm>.

LMNO Engineering, Research, and Software, Ltd., Rational Equation Calculator, 2013:

<https://www.lmnoeng.com/>.

Michigan Department of Transportation Drainage Manual – Chapter 7:

https://www.michigan.gov/documents/MDOT_MS4_Chap_91735_7_07_Drainage_Manual.pdf.

Michigan Department of Environment, Great Lakes, and Energy, Minimum Well Isolation Distances (From Contamination Sources and Buildings) Part 127, Act 368, P.A. 1978 and Act 399, P.A. 1976

https://www.michigan.gov/documents/deq/deq-dwmad-sh-swpu-Isolation_Distances_Chart_623619_7.pdf

Michigan Department of Environment, Great Lakes, and Energy, Automotive Salvage and Scrap Metals Handlers Website: https://www.michigan.gov/egle/0,9429,7-135-3307_36106-235729--00.html.

Michigan Department of Environment, Great Lakes, and Energy, Municipal Program / MS4 Compliance Assistance and the Phase II Permit Website:

https://www.michigan.gov/egle/0,9429,7-135-3313_71618_0682_3716-24366--00.html.

Michigan Natural Resources and Environmental Protection Act (NREPA) of 1994, Act 451 of 1994, as amended:

[http://www.legislature.mi.gov/\(S\(ba2ew10kk4hbtjdn12aacb43\)\)/miled.aspx?page=GetObject&objectname=mcl-Act-451-of-](http://www.legislature.mi.gov/(S(ba2ew10kk4hbtjdn12aacb43))/miled.aspx?page=GetObject&objectname=mcl-Act-451-of-1994#&text=AN%20ACT%20to%20protect%20the%20lands%2C%20waters%2C%20and%20other%20natu)

[1994#&text=AN%20ACT%20to%20protect%20the%20lands%2C%20waters%2C%20and%20other%20natu](http://www.legislature.mi.gov/(S(ba2ew10kk4hbtjdn12aacb43))/miled.aspx?page=GetObject&objectname=mcl-Act-451-of-1994#&text=AN%20ACT%20to%20protect%20the%20lands%2C%20waters%2C%20and%20other%20natu)
[ral](http://www.legislature.mi.gov/(S(ba2ew10kk4hbtjdn12aacb43))/miled.aspx?page=GetObject&objectname=mcl-Act-451-of-1994#&text=AN%20ACT%20to%20protect%20the%20lands%2C%20waters%2C%20and%20other%20natu)

Michigan Natural Resources and Environmental Protection Act, 342.20120c Relocation of contaminated soil:

[http://www.legislature.mi.gov/\(S\(zhm4uyagbqg5xdzbtynmibyp\)\)/miled.aspx?page=GetObject&objectname=mcl-324-20120c](http://www.legislature.mi.gov/(S(zhm4uyagbqg5xdzbtynmibyp))/miled.aspx?page=GetObject&objectname=mcl-324-20120c)

Michigan Department of Environmental Quality, Michigan Nonpoint Source Best Management Practices Manual, 2017: https://www.michigan.gov/documents/deq/wrd-nps-brmp-intro_577101_7.pdf

Michigan Department of Environmental Quality, "Equipment Maintenance and Storage Areas," 2015: https://www.michigan.gov/documents/deq/deq-wb-nps-ams_250618_7.pdf.

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&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPa
ges=1&ZyEntry=3#](http://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp)

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<https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp>

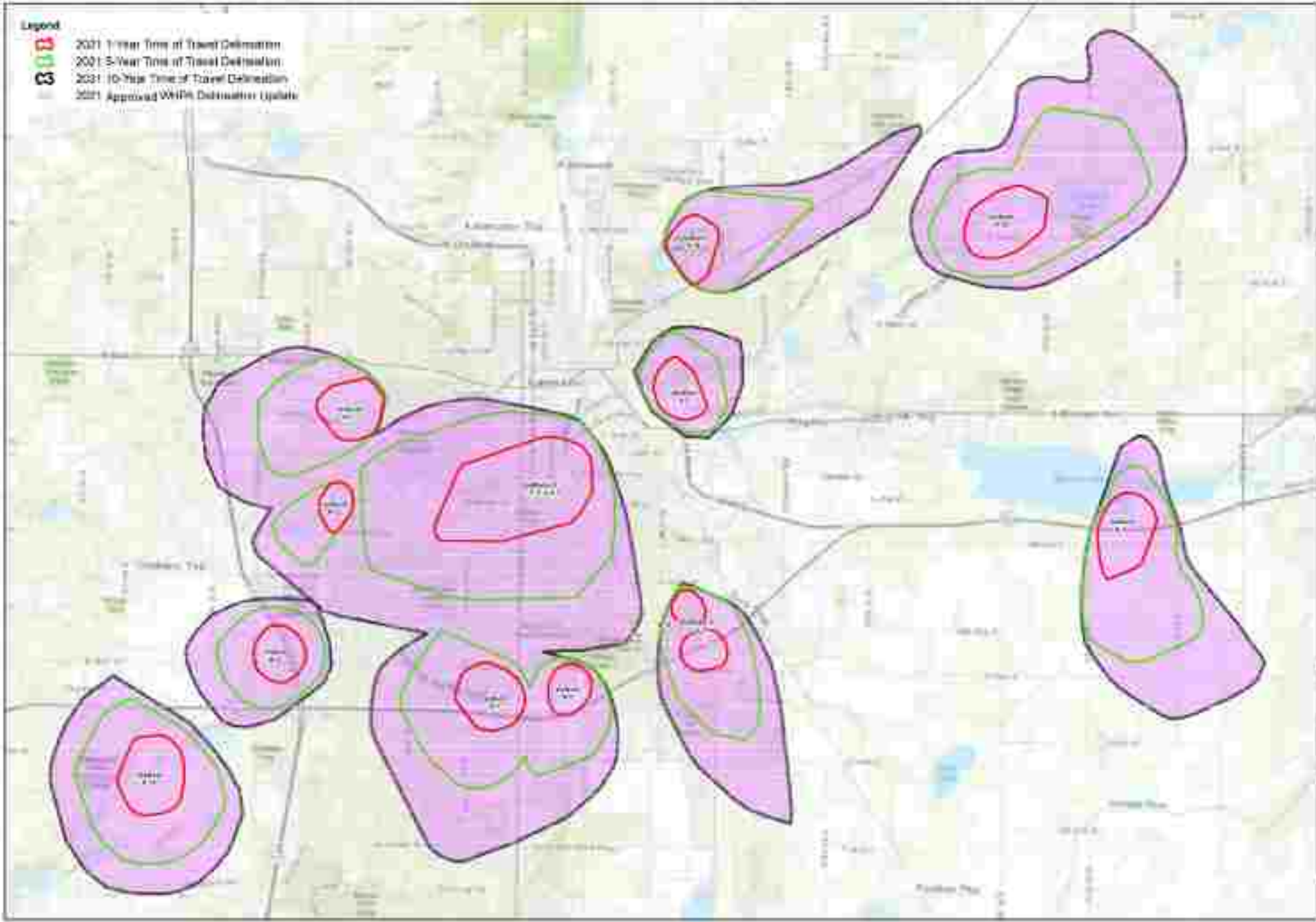
FIGURES

Figure 1: Wellhead Protection Overlay (2022)

Figure 2: Natural Features Protection Areas Zoning Overlay (2022)

Figure 3: Spill Containment Cell

Figure 4: Water Quality Swale



- Legend**
- 2021 1-Year Time of Travel Delineation
 - 2021 5-Year Time of Travel Delineation
 - 2021 10-Year Time of Travel Delineation
 - 2021 Approved WFRM Delineation Update



CITY OF KALAMAZOO
1000 EAST MAIN STREET, KALAMAZOO, MI 49001

2021 Approved 10-Year Time of Travel Delineation Update
 APPROVAL: APRIL 20, 2021

DATE	ISSUE
04/20/21	1.0000
07/14/21	1.0000



Figure 2: Natural Features Protection Areas Zoning Overlay (2022)

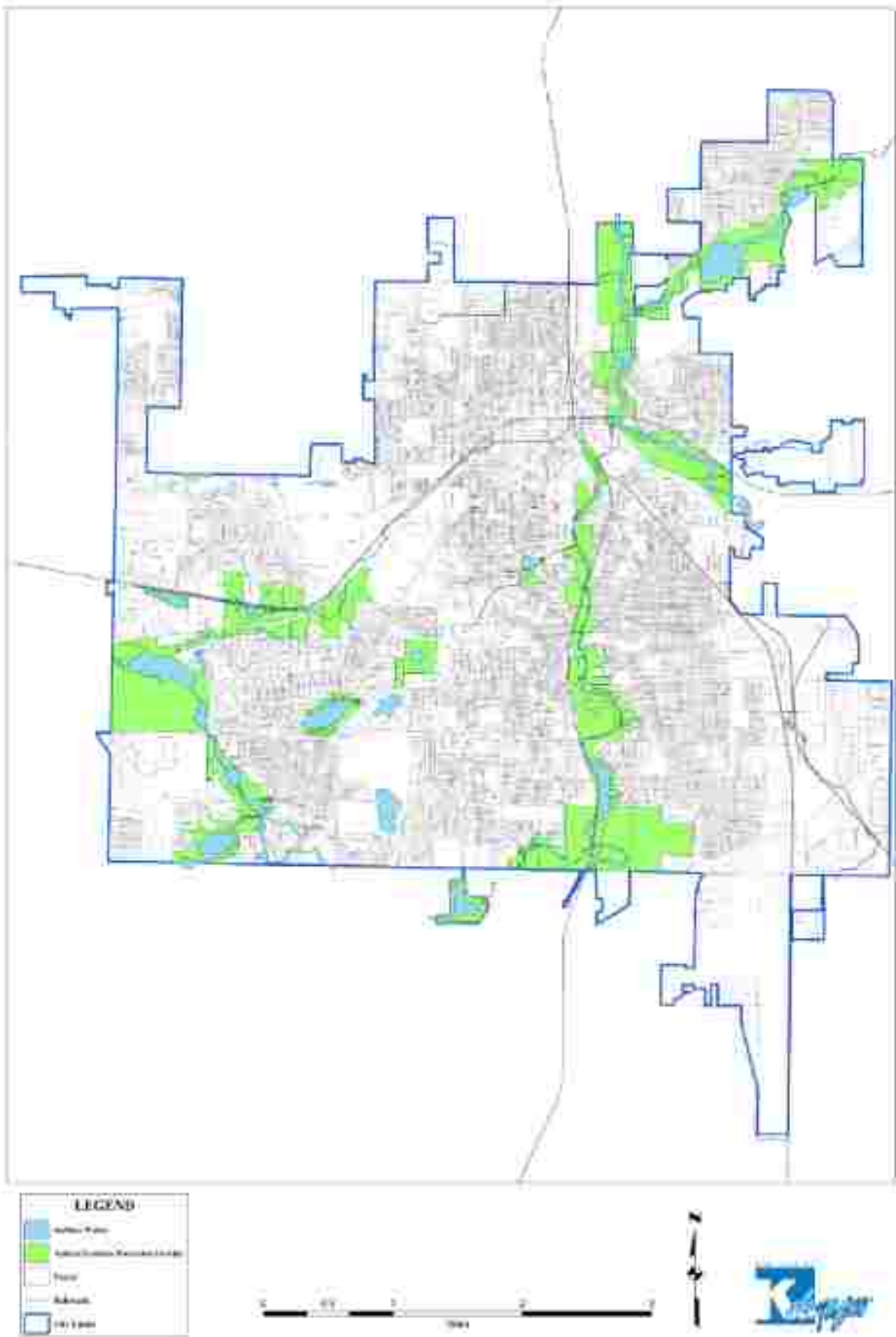
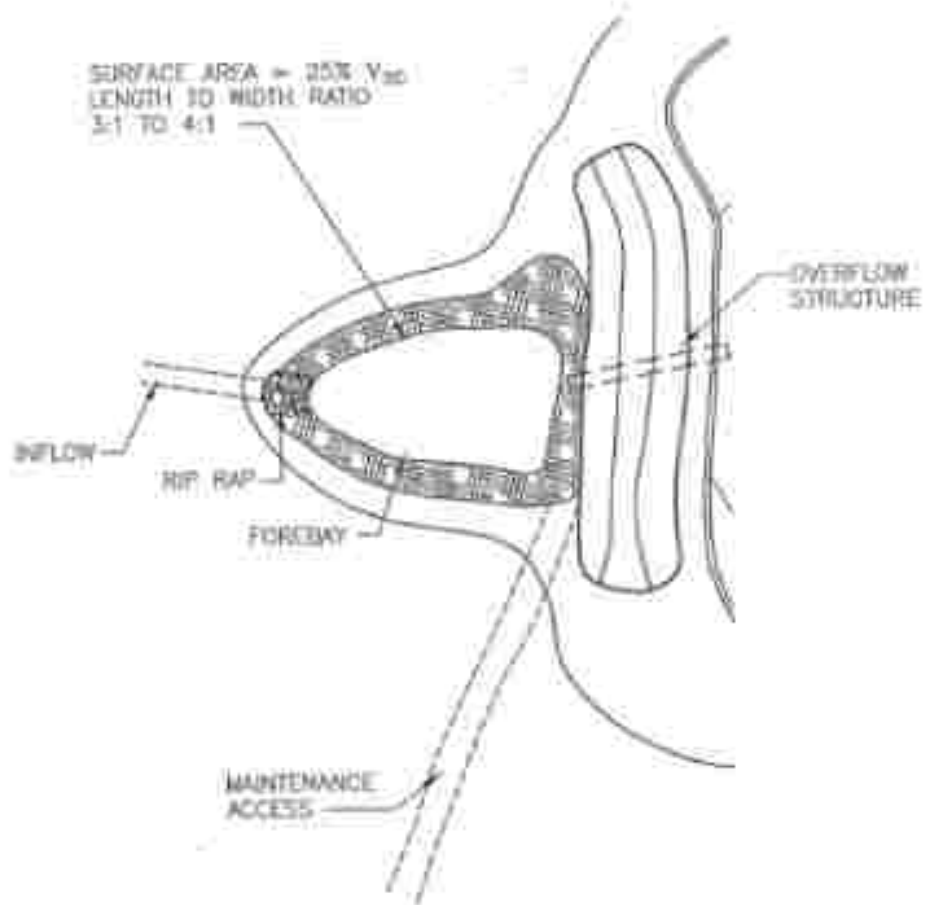


Figure 3: Spill Containment Cell



PLAN VIEW

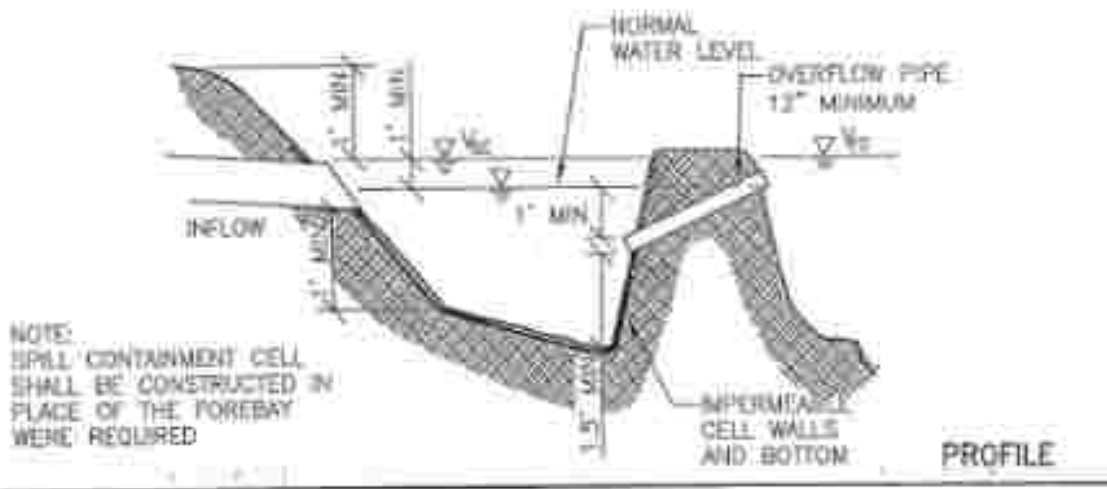
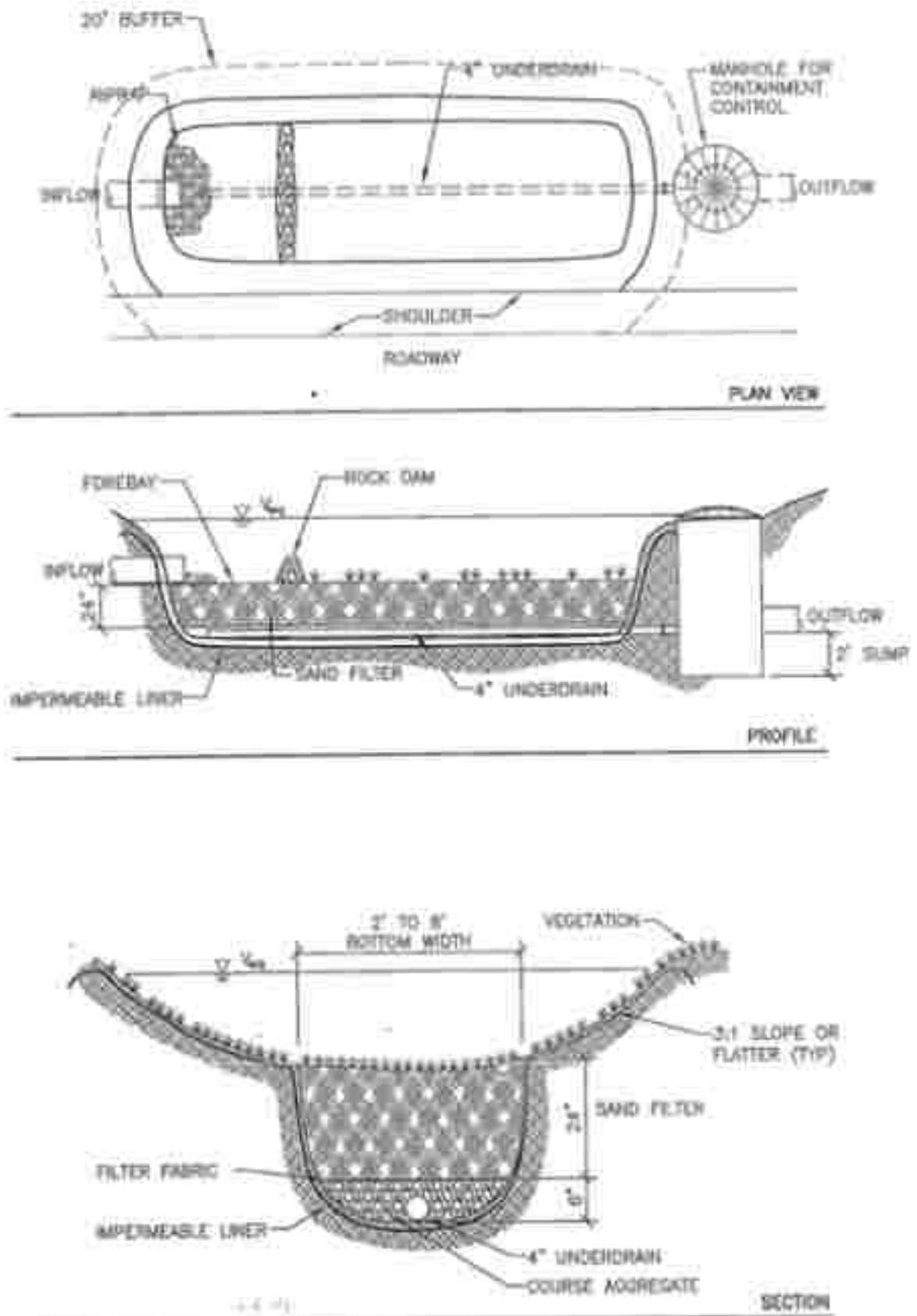


Figure 4: Water Quality Swale



STORMWATER WORKSHEETS

Stormwater Calculations Worksheet

Uniform Stormwater Standard 1: Water Quality Treatment Volume & MTD Worksheet

Uniform Stormwater Standard 2: Channel Protection Volume Worksheet

Stormwater Calculations Worksheet

PRE-DEVELOPMENT CONDITIONS

Surface Cover	Runoff Coefficient, C	Area of Surface Cover (ft ²)
Lawns	0.1	
Forest	0.15	
Gardens	0.25	
Meadow	0.3	
Gravel	0.6	
Brick/Pavers	0.8	
Asphalt/Concrete	0.9	
Roofs	0.9	
Total Site Size (ft ²)		
Total Site Size (acres)		
Runoff Coefficient (weighted average)		
Flow Rate (ft ³ /s): 1 year - 30 minute event		
Runoff Volume (ft ³): 2 year - 24 hour event		
Runoff Volume (ft ³): 10 year - 24 hour event		
Treatment Volume = Site Area x 0.083 ft		Standard 1
i = 1.85 inches/hour for Treatment (1 year - 0.5 hour)		Standard 1
i = 0.108 inches/hour for Storage (2 year - 24 hour)		Standard 2, 3, 7
i = 0.153 inches/hour for Storage (10 year - 24 hour)		Standard 3, 7 NFP

POST-DEVELOPMENT CONDITIONS

Surface Cover	Runoff Coefficient, C	Area of Surface Cover (ft ²)
Lawns	0.1	
Forest	0.15	
Gardens	0.25	
Meadow	0.3	
Gravel	0.6	
Brick/Pavers	0.8	
Asphalt/Concrete	0.9	
Roofs	0.9	
Total Site Size (ft ²)		
Total Site Size (acres)		
Runoff Coefficient (weighted average)		
Flow Rate (ft ³ /s): 1 year - 30 minute event		
Runoff Volume (ft ³): 2 year - 24 hour event		
Runoff Volume (ft ³): 10 year - 24 hour event		
Required Treatment Volume (ft ³)		
Required Treatment Flow Rate (ft ³ /s)		
Required Storage Volume (ft ³): 2 year - 24 hour		
Required Storage Volume (ft ³): 10 year - 24 hour		

*Rational Method Used for All Calculations, where Q = CA (unless stated otherwise)

Instructions: Input the areas (ft²) of the site for each type of surface cover

*For determining required detention/retention volumes, Pre-Development Conditions shall be 100% forested with a 50% allowance for existing impervious coverage (example: if a site is 100% impervious, existing conditions shall be 50% forested and 50% impervious)

UNIFORM STORMWATER STANDARD 1: WATER QUALITY TREATMENT VOLUME & MTD WORKSHEET

**Applies to Sites \geq 0.5 Acres and Large Parking Lots with \geq 20 Spaces and/or $>$ 9,000 ft²

***If not NJCAT verified and NJDEP Certified, provide further documentation for the proposed BMPs

List All Proposed Treatment BMPs below and Show Locations on the Plans				
Proposed Treatment BMP	NJCAT Verified?	NJDEP Certified?	Maximum Treatment Volume, ft ³	Maximum Treatment Flow Rate, ft ³ /s
Proposed Total Treatment Volume and Flow Rate				
Required Treatment Volume and Flow Rate from Stormwater Calculations Worksheet				
Difference Between Required and Proposed Treatment Volume and Flow Rate				
Are Volume and Flow Rate Requirements Met? If difference is greater than zero, NO				

Attach this form and supporting documentation for selected BMPs to the Storm Water Calculations Worksheet

UNIFORM STORMWATER STANDARD 2: CHANNEL PROTECTION VOLUME WORKSHEET

**Applies to Sites where Standard 2, 3 and 7 apply. **10-year 24 hour is for Standard 3, 7 and NFP Sites.

***Detention and Retention BMPs shall drain between runoff events

List All Proposed Detention/Retention BMPs below and Show Locations on the Plans

Proposed Detention/Retention BMP	Volume Detained/Retained, ft ³
Proposed Total Volume	
Required Storage Volume (ft³): 2 year - 24 hour	
Difference Between Required and Proposed Volume	
Is Sufficient Volume Retained/Detained? If difference is greater than zero, NO	
Required Storage Volume (ft³): 10 year - 24 hour	
Difference Between Required and Proposed Volume	
Is Sufficient Volume Retained/Detained? If difference is greater than zero, NO	

Attach this form and supporting documentation for selected BMPs to the Storm Water Calculations Worksheet

ATTACHMENTS

Attachment 1 - Minimum Isolation Distances

**Attachment 2 - Stormwater Best Management Practices
Operations and Maintenance Agreement**

Attachment 3: Chemical Inventory and Storage Form

Attachment 4 – Stormwater Treatment Inspection Report

Attachment 1

Minimum Well Isolation Distances



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

MINIMUM WELL ISOLATION DISTANCES
 (From Contamination Sources and Buildings)
 Part 127, Act 368, P.A. 1978 and Act 399, P.A. 1976

The following lists sources of contamination and the well isolation distances required from those sources by state codes. The Michigan Department of Environmental Quality and local health departments have authority to issue deviations from these minimum isolation distances on a case by case basis. Criteria for issuance of deviations are set forth in R 325.1613 of the Rules for Part 127, and R 325.10809 of the Rules for Act 399.

* – For the isolation distances marked with a single asterisk, the isolation distance is for a source of contamination which is not specifically listed in the rules. However, the source of contamination is interpreted as belonging in a general contamination source group (example – a sewage holding tank is the same as a septic tank) which is listed in the rules, and therefore, the isolation distance listed in this document is required.

** – For the isolation distances marked with a double asterisk, the isolation distance is from a source of contamination which is not specifically named in the rules. However, the Michigan Department of Environmental Quality has established a recommended isolation distance based on the contaminant involved, the risk to public health, and other factors. Under the general authority of a health officer's responsibility to protect the public health, health officers may modify this recommended isolation distance, either increasing or decreasing it, on a case by case basis.

CONTAMINATION SOURCE	Required MINIMUM Isolation Distance (Feet)		
	Part 127, Act 368 PA 1978	Act 399, PA 1976	
		IIb and III	I and IIa
Agricultural chemical or fertilizer storage or preparation area	150	800	2000
Animal waste lagoon or manure storage	*150	800	2000
Animal or poultry yard	50	75	200
Brine wells or injection well	**150	**800	**2000
Building or projection thereof	3	3	3
Cemetery and graves	*50	*75	*200
Cesspool	50	75	200
Chemical Storage	150	800	2000
Contaminant plumes, known (Part 201, LUST sites, etc.)	**300	**800	**2000
Drainfield	50	75	200
Drywell	50	75	200
Footing drain	10	10	10
Fuel/chemical storage tanks – Underground or abovegrade and associated piping			
depot/tank farm	300	800	2000
1,100 gal. or larger, without secondary containment	300	800	2000
1,100 gal. or larger with secondary containment	50	800	2000
less than 1,100 gal. that store motor or heating fuel for noncommercial purpose or consumptive use on premises where fuel is stored.	50	800	2000
less than 1,100 gal. that store motor fuel for commercial purpose	*50	800	2000
located in a basement, regardless of size	*50	800	2000
Grease trap	50	*75	*200
Kitchen	50	*75	*200
Landfill or dump sites (Active or Inactive)	800	800	2000

Liquid waste draining into the soil	50	75	200
Metering station for pipeline	300	300	300
Municipal wastewater effluent or sludge disposal area (land surface application or subsurface injection)	300	800	2000
Municipal wastewater lagoon	300	800	2000
Oil or gas well	300	300	300
Other wastewater handling or disposal unit	50	75	200
Petroleum product processing or bulk storage	300	800	2000
Pipeline for gas, oil	300	300	300
Privy/outhouse	50	75	200
Seepage pit	50	75	200
Septic tank	50	75	200
Septage waste (land application area)	800	800	2000
Sewage holding tank	50	75	200
Sewage lagoon serving a single family dwelling	50	75	200
Sewage lagoon effluent – land application area	50	800	2000
Sewage or liquid waste draining into soil	50	75	200
Sewage pump chamber, transfer station, or lift station	50	75	200
Sewers			
Buried gravity sewer (sanitary or storm) - Service weight or heavier ductile-iron or cast iron, or schedule 40 PVC, all with watertight joints	10	75	200
Buried pressure sewer (sanitary or storm) Watertight joints (pressure tested after installation to 100 psi), equivalent to Schedule 40 or SDR 21, and meets or exceeds ASTM Specifications D1785-91 or D2241-89	10 (by written deviation only)	75	200
Buried gravity or pressure sewer (sanitary or storm), constructed of materials not meeting the specifications listed in the two categories above, or the materials are unknown	50	75	200
Sump pit			
Receiving other than household waste (footing drain, roof drain, etc.)	10	10	10
Receiving household waste (laundry, softener backwash, sink waste, etc.)	50	75	200
Surface water (lake, river, stream, pond, ditch, etc.)	10	75	200
Unfilled space below ground surface (except an approved basement, basement offset, or crawl space beneath single family dwelling)	10	10	10

Note: The above listed isolation distances are maximum distances. The regulatory agency has the authority to increase the minimum isolation distance based on factors such as: geology, groundwater flow direction, well construction, type of contaminant, etc.

Attachment 2

Stormwater Best Management Practices Operations and Maintenance Agreement

STORMWATER AGREEMENT

THIS AGREEMENT, effective _____, 20____, between the City of Kalamazoo, a Michigan municipal corporation, whose address is 241 West South Street, Kalamazoo, Michigan, Kalamazoo, Michigan 49007 (City) and _____, [status of landowner, i.e. individual(s) or companies] whose address is _____ (Landowner).

Recitals:

- A. The City is regulated under the U.S. Environmental Protection Agency's (EPA) Phase II Stormwater Program since it has a municipal separate storm sewer system (identified in the Performance Standards as MS4). Therefore, the City is required to have a National Pollutant Discharge Elimination System (NPDES) Permit for its discharge of stormwater. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) administers the NPDES permit program for the State of Michigan (33 U.S.C. 1251 et seq., P.L. 92-500, 95-217) under Part 31, Water Resources Protection, of Michigan's "Natural Resources and Environmental Protection Act", 1994 PA 451 (NREPA).
- B. Landowner owns real estate in the City at _____, Kalamazoo, MI 4900 - Parcel No(s) _____ - and which is more specifically described in Exhibit A (Property).
- C. Landowner uses the Property for multi-family residential, commercial, and industrial purposes, or a combination of those uses. Landowner is making improvements to the Property that require approval under the City's Site Plan Review process, or is modifying the existing stormwater discharge system on the Property that either impacts the City's system or the retention of stormwater on the Property. As a result of those uses, improvements or modifications, Landowner agrees: (i) to install and maintain stormwater best management practices (BMPs) on the Property in accordance with approved plans and conditions; and (ii) to ensure that the BMPs continue serving the intended function in perpetuity.
- D. Before signing this Agreement, the Landowner, including its representatives, contractors or agents, has reviewed or had the opportunity to review the Performance

Standards, work sheets or other documents maintained by the City relating to the City's regulation of its Stormwater Program and this Agreement.

THEREFORE, in consideration of the above recitals and the covenants, conditions, and restrictions stated below, the parties agree as follows:

1. Recitals. The above recitals are acknowledged as true and correct, and are incorporated by reference into this paragraph.
2. Installation and Maintenance. Landowner is solely responsible for the installation, maintenance and repair of the stormwater BMPs.
3. Inspections and Repairs. Landowner shall regularly inspect, maintain, repair or replace the private stormwater BMPs consistent with the Manufactured Treatment Device (identified in the Performance Standards as MTD) as recommended by the manufacturer, and those recommendations provided in the "Low Impact Development Manual for Michigan – A Design Guide for Implementers and Reviewers" (Southeast Michigan Council of Governments and MDEQ, 2008), and "Michigan Nonpoint Source Best Management Practices Manual" (MDEQ, 2017).
4. Submission of Reports. Landowner shall annually submit a report to the City – on the form provided by the City – regarding stormwater BMPs Operation & Maintenance for each of the MTDs and other BMPs. Landowner shall deliver the report to the City's Water Programs Manager either by mail to 1415 N. Harrison Street, Kalamazoo, MI 49007, via fax at (269) 337-8535, or via e-mail to the current manager, talandaj@kalamazoo-city.org, within 30 calendar days of the inspection date.
5. Modifications to the Stormwater System. Landowner shall contact the City for approval prior to any design modifications to the stormwater treatment and/or conveyance system on the Property.
6. City's Access to the Property. Landowner, its successors and assigns, hereby grants the City, its authorized agents and employees, the right to enter upon the Property to inspect the stormwater BMPs whenever the City reasonably considers an inspection necessary in carrying out the intent and purpose of this Agreement. For example, an inspection may occur: (i) to follow-up on reported deficiencies in Landowner's exercise of stormwater BMPs; or (ii) to address lack of submitted documentation Landlord is required to submit to the City; or (iii) to respond to citizen complaints. The City shall provide Landowner with copies of the inspection findings, including any directive to perform maintenance, repairs or replacements, if necessary, to the stormwater conveyance system on the Property.
7. Default by Landowner/Remedies. If Landowner fails to maintain the stormwater BMPs and associated stormwater conveyance system in good working condition acceptable to the City, the City may enter upon the Property and take whatever steps necessary to correct deficiencies, including those identified in the inspection report. Landowner is responsible to pay the costs the City incurred for those repairs. The City will provide an itemized list of the repairs in an invoice to

Landowner, which is due within 30 days of the date on the invoice. To secure any amount owed by Landowner to the City under this Paragraph, the City has the right to place a lien against the Property in the same manner as delinquent taxes, including accruing interest, penalties and administrative expenses until the lien is fully satisfied.

It is expressly understood and agreed that the City is under no obligation to routinely inspect, maintain or repair the stormwater BMPs or stormwater conveyance system; and in no event shall this Agreement be construed to impose those obligations on the City.

8. No Liability of the City. This Agreement imposes no liability of any kind whatsoever on the City and the Landowner agrees to hold the City harmless from any liability if the stormwater BMPs and/or stormwater conveyance system failure to operate properly.
9. Compliance with other Laws. This Agreement does not replace or change the requirements of the Landowner to comply with all other applicable federal, state and local laws, rules and regulations; specifically including, without limitation, Ordinance No. 1825 (Wellhead Protection Overlay), Ordinance No. 1826 (Performance Standards for Groundwater Protection Within Wellhead Protection Capture Zones and Stormwater Management) and Chapter 29 of the Code of Ordinances (Stormwater System).
10. Binding Effect/Third Parties. This Agreement is binding on and shall inure to the benefit of the parties to this Agreement and their respective successors. Neither party may assign this Agreement without the prior written consent of the other party. The parties do not intend to confer any benefits on any person, firm, corporation, or other entity which is not party to this Agreement.
11. Governing Law. This Agreement is governed under applicable Michigan law. Both parties had the assistance of or the opportunity to seek legal counsel regarding the signing of this Agreement. Therefore, no construction or ambiguity of this Agreement is resolved against either party.
12. Waiver. A party does not waive any of its rights under this Agreement if that party fails to complain about an act or omission by the other party, no matter the duration of that act or omission. And a waiver by either party, whether expressed or implied, of any breach of a provision in this Agreement is not considered a waiver or consent to any subsequent breach of this same or other provision.

Exhibits. This Agreement includes the following exhibits Landowner agrees to provide:

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 BMP affected by this Agreement.

Exhibit C: A List of all stormwater BMPs, including Manufacturer, Model, and locational reference to Exhibit B.

13. Headings. Headings in this Agreement are for convenience only and are not intended to interpret or construe its provisions.
14. Entire Agreement/Counterparts. This Agreement supersedes all agreements previously made between the parties relating to the subject matter. There are no other understandings or agreements between them. The parties may sign this Agreement in counterparts, which together shall comprise a single agreement, and the effective date for which is the date it is signed by both parties.
15. Authorization. Each of the parties represents and warrants to the other that this Agreement and its execution by the individual(s) on its behalf are authorized by the city commission, the board of directors or other governing body or organizational agreement of that party.
16. Definitions. The terms set forth in this Agreement shall have the same meaning as commonly used, except any term that is defined under statutes, ordinances or laws identified above, or any other applicable state statute shall have the meaning set forth under that ordinance, statute or law, including any subsequent amendments.
17. Recording. The City reserves the right to file a memorandum reflecting the existence of this Agreement with the Kalamazoo County Register of Deeds.

LANDOWNER

(Name, Title, and Corporation or Entity)

By: _____
Its: _____

STATE OF MICHIGAN }
 } ss.
COUNTY OF KALAMAZOO }

The foregoing instrument was acknowledged before me on _____,
20__ by _____ (Name), _____ (Title),
_____ (Corporation or Entity).

Notary Public
Kalamazoo County, Michigan
My commission expires: _____

CITY OF KALAMAZOO

By: James J. Baker, P.E.
Its: Director of Public Services

STATE OF MICHIGAN }
 } ss.
COUNTY OF KALAMAZOO }

The foregoing instrument was acknowledged before me on _____,
20 __, by James J. Baker, Director of Public Services, City of Kalamazoo.

Notary Public
Kalamazoo County, Michigan
My commission expires: _____

Prepared By & After Recording Return To:
The Office of City Attorney - Clyde Robinson, City Attorney
241 West South Street
Kalamazoo, MI 49007
(269) 337-8185

Attachment 3

Chemical Inventory and Storage Form



CHEMICAL INVENTORY AND STORAGE FORM PART 1

KALAMAZOO DEPARTMENT OF PUBLIC SAFETY RIGHT TO KNOW QUESTIONNAIRE

DATE COMPLETED:			
NAME OF PREMISES:			
SITE ADDRESS:			
SITE TELEPHONE:			
EMERGENCY TELEPHONE:	(Numbers should be direct to facility representatives and available 24 hrs. Number should by-pass automated phone lines)		
QUESTIONNAIRE COMPLETED BY:			
PHONE:			
EMAIL ADDRESS:			
SITE USE: <small>Please check most appropriate box</small>	<input type="checkbox"/>	CHEMICAL USER (Chemicals used in activities on site)	
	<input type="checkbox"/>	CHEMICAL PRODUCER (Chemicals manufactured at this site, includes packaging)	
	<input type="checkbox"/>	OTHER (Chemicals are stored on site, but not used or produced. Such as service stations, retail stores, storage facility)	

Emergency Contacts: (Include Private Alarm / Security Companies, Maintenance Staff)				
NAME	TITLE	BUSINESS PHONE	HOME PHONE	CELL PHONE

EMERGENCY VENDORS	
SPILL CLEAN UP COMPANY:	
ADDRESS:	
PHONE NUMBERS REGULAR and AFTER HOURS NUMBERS:	

**KALAMAZOO DEPARTMENT OF PUBLIC SAFETY
RIGHT TO KNOW QUESTIONNAIRE**

CHEMICAL TYPE SURVEY				
Check 1 Box for Each Category				
CHEMICAL TYPE	SPECIFIED QUANTITY	HAVE AT OR ABOVE SPECIFIED QUANTITY	HAVE BUT BELOW SPECIFIED QUANTITY	DO NOT HAVE
CLASS 1				
Explosives & Blasting Agents (Not including Class C Explosives)	Any Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 2				
Poison Gas	Any Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flammable Gas	100 gal. Water Capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Flammable Gas	100 gal. water capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 3				
Flammable Liquid	1000 gallons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Combustible Liquid	10,000 gallons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 4				
Flammable Solid (Dangerous when wet)	100 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flammable solid	500 lbs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spontaneously Combustible Material	100 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 5				
Oxidizer	500 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organic Peroxide	250 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 6				
Poison	500 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irritating Material: Liquid	1000 gallons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irritating Material: Solid	500 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 7				
Radioactive Material (Yellow III Label)	Any Quantity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASS 8				
Corrosives: Liquid	1000 gallons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Corrosives: Solid	500 lbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NO BOX CATEGORY				
Known Human Carcinogen	Any Category	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The Michigan Occupational Safety and Health Act (MIOSHA) requires that the Department of Public Safety prepare and disseminate to our Officers a plan for executing the department's responsibilities with respect to each site within the City of Kalamazoo where hazardous chemicals are used or produced. There are no exemptions based on the quantity of chemicals at the site. The purpose of the act is to ensure firefighter safety.

**KALAMAZOO DEPARTMENT OF PUBLIC SAFETY
RIGHT TO KNOW QUESTIONNAIRE**

HAZARDOUS CHEMICAL DEFINITIONS

Carcinogen -- A chemical is considered to be a carcinogen if: 1) it has been evaluated by the International Agency for Research on Cancer (IARC) and found to be a carcinogen or potential carcinogen; or 2) it is listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP) (latest edition); or 3) it is regulated by OSHA as a carcinogen.

Combustible liquid - Any liquid having a flashpoint at or above 100 degrees F (37.8 degrees C), but below 200 degrees F (93.3 degrees C), or higher, the total volume of which make up 99 percent or more of the volume of the mixture.

Corrosive (liquid and solid) - Any liquid or solid that causes visible destruction or irreversible damage to human skin tissue. Also, it may be a liquid that has a severe corrosive rate on steel.

Explosives and blasting agent (not including Class C explosives) - "Explosive" means a chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high pressure. "Blasting Agent" means a material designed for blasting. It must be insensitive that there is very little probability of: 1) accidental explosion; or 2) going from burning to detonation.

Flammable liquid - Any liquid having a flashpoint below 100 degrees F (37.8 C), except any mixture having components with flashpoints of 100 degrees F (37.8 C) or higher, the total of which makes up 99 percent or more of the total volume of the mixture.

Flammable gas - A gas that can burn with the evolution of heat and a flame. Flammable compressed gas is any compressed gas of which: 1) a mixture of 13 percent or less (by volume) with air is flammable, or 2) the flammable range with air is under 12 percent.

Flammable solid - A solid, other than a blasting agent or explosive, that is liable to cause fire through friction, absorption or moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or which can be ignited readily and when ignited burns so vigorously and persistently as to create a serious hazard.

Flammable solid (dangerous when wet) - - Water Reactive Material (Solid) - Any solid substance (including sludges and pastes) which react with water by igniting or giving off dangerous quantities of flammable or toxic gases. (Sec. 171.8).

Irritating material - liquid and solid - A liquid or solid substance which, upon contact with fire or air, gives off dangerous or intensely irritating fumes.

Non-flammable gas - Any compressed gas other than a flammable compressed gas.

Organic peroxide - An organic compound that contains the bivalent -O-O structure and which may be considered to be a structural derivative of hydrogen peroxide where one or both of the hydrogen atoms has been replaced by an organic radical.

Oxidizer - A chemical that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases. Examples being chlorate, permanganate, inorganic peroxide, or a nitrate, that yields oxygen readily.

Poison (see extremely poisonous liquid) - substances, liquid or solids (including pastes and semi-solids) so toxic to man that they are a hazard to health during transportation.

Poison gas (extremely dangerous liquids, highly toxic poisonous gases or liquids) - a very small amount of the gas, or vapor of the liquid, mixed with air is dangerous to life.

Radioactive material (yellow 111 label) - Any material, or combination of materials, that spontaneously gives off ionizing radiation.

Spontaneously combustible material (Solid) - A solid substance (including sludge's and pastes) which may undergo spontaneous heating or self-heating under normal transportation conditions. These materials may increase in temperature and ignite when exposed to air.



CHEMICAL INVENTORY AND STORAGE FORM PART 2 DRINKING WATER PROTECTION QUESTIONNAIRE

Please summarize the activities at this site, including principal products or services provided:

Please check the corresponding box if your facility has prepared any of the following:
<input type="checkbox"/> Pollution Incident Pollution Plan (PIPP)
<input type="checkbox"/> Risk Management Program/Plan (RMP)
<input type="checkbox"/> Spill Prevention, Control and Countermeasures Plan (SPCC)
<input type="checkbox"/> Storm Water Pollution Prevention Plan (SWPPP)
<input type="checkbox"/> Hazardous Waste Contingency Plan (HWCP)
<input type="checkbox"/> Other Spill Contingency Plan, please explain.

Please check the corresponding box if your facility has prepared or is designated as any of the following:
<input type="checkbox"/> Listed as a Part 201 Site under Act 451
<input type="checkbox"/> Listed as a Part 213, Leaking Underground Storage Tank, Site under Act 451
<input type="checkbox"/> Baseline Environmental Assessment
<input type="checkbox"/> Due Care Plan
<input type="checkbox"/> Other known release of a regulated substance or ongoing contamination, please explain.

Kalamazoo's wellhead protection ordinance (No. 1825) defines the following as Regulated Substances:

1. Substances for which there is a material safety data sheet (MSDS), and the MSDS cites possible health hazards
2. Hazardous Waste, as defined by the Resource Conservation and Recovery Act (RCRA) of 1976
3. Hazardous Substance, as defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
4. Radiological materials
5. Biohazards

EXAMPLES OF REGULATED SUBSTANCES INCLUDE:

A. PETROLEUM PRODUCTS
Examples: Gasoline, Motor Oil, Heating Oil, Diesel, Lubric Oil
B. RADIOLOGICAL MATERIALS
Common Uses: Gas Chromatography, Scientific Research, Gauges, Manufacturing, Medicine
C. INORGANIC COMPOUNDS (Metals, Metal Compounds and certain Acids and Bases)
Examples: Chromium, Arsenic, Cyanide, Nitrate, Hydrochloric Acid, Sodium Hydroxide
D. FERTILIZERS, PESTICIDES AND OTHER SYNTHETIC ORGANIC COMPOUNDS
Examples: 10-10-10, Ammonium nitrate, Atrazine, Carbofuran, Simazine, Bone Meal
E. VOLATILE ORGANIC COMPOUNDS (VOCs)
Examples: Paints, Varnish, Solvents, Thinners, Adhesives
F. SALT
Examples: Calcium Chloride, Sodium Chloride, Sand/Salt Mixtures

Do you use or store regulated substances onsite?

Yes No

If you answered "no" to this question, you do not need to complete page 5 of the questionnaire.

DRINKING WATER PROTECTION QUESTIONNAIRE

Please check any boxes that describe the activities that occur at your property.

Commercial

- Analytical and clinical laboratories
- Animal feedlots
- Auto washes
- Boat builders/refinishers
- Car rental and service stations/automotive repair
- Commercial establishments with fleets of trucks and cars
- Concrete/asphalt/coal/tar companies
- Drum recycling and cleaning
- Dry cleaners and laundries
- Equipment repair
- Food processors/meat packers/slaughter houses
- Fuel oil distributors/stores
- Furniture stripping or refinishing
- Gas stations
- Junk and salvage yards
- Motor vehicle repair/service shops
- Pesticide application services/pesticide stores/retailers
- Petroleum bulk storage (wholesale)
- Photographic development
- Printing
- Salvage yards/impoundment lots
- Truck or rail tanker cleaning
- Wood preserving and treatment

Manufacturing

- Chemical, paint, and plastics manufacturing
- Furniture manufacturing
- Metal manufacturing (including metal plating)
- Mining operations/injection wells
- Other manufacturing (textiles, rubber, glass, etc.)
- Pulp and paper industry

Transportation

- Airport maintenance/fueling areas
- Governmental agencies with fleets of trucks and cars
- Salt piles/sand-salt piles
- Trucking/bus terminals
- Vehicle maintenance operations (transportation/trucking, contractors/construction, auto dealers)

Utilities

- Aboveground oil pipelines
- Electric power generation substations

Waste Disposal

- Landfills/umps/transfer stations

If you store regulated substances onsite, please summarize the security measures at this site, including fencing, lighting, and flow valves (are they locked when not in use?):

DRINKING WATER PROTECTION QUESTIONNAIRE

REGULATED SUBSTANCES INVENTORY – INDOOR STORAGE AREAS

Our priority is to inventory materials stored in aggregate quantities greater than 55 gallons or 440 pounds. Aggregate quantity means the total storage amount of each material onsite, regardless of container size.

If your facility stores any regulated substances in INDOOR storage areas onsite, please list the specific types of materials below.

Material Name (Chemical or Brand)	Material Use	Container Type ¹	Container Material	Max. Quantity Stored Onsite (with Units)	Are floor drains present in storage area? If yes, are they connected to sanitary sewer, storm sewer, or other?		Containers properly labeled?	How often is the area inspected?	Are walls and floors impervious? Please list material.
					<input type="checkbox"/> Yes <input type="checkbox"/> No				
Example: Hydraulic oil	Lubricant	Drum	Steel	55 Gallons	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		Yes	Weekly	Yes, concrete
					<input type="checkbox"/> Yes <input type="checkbox"/> No				
					<input type="checkbox"/> Yes <input type="checkbox"/> No				
					<input type="checkbox"/> Yes <input type="checkbox"/> No				
					<input type="checkbox"/> Yes <input type="checkbox"/> No				
					<input type="checkbox"/> Yes <input type="checkbox"/> No				
					<input type="checkbox"/> Yes <input type="checkbox"/> No				
					<input type="checkbox"/> Yes <input type="checkbox"/> No				

¹ Examples: aboveground storage tank (AST), underground storage tank (UST), drum, bags, bottles, pails.

DRINKING WATER PROTECTION QUESTIONNAIRE

REGULATED SUBSTANCES INVENTORY – OUTDOOR STORAGE AREAS

Our priority is to inventory materials stored in aggregate quantities greater than 55 gallons or 440 pounds. Aggregate quantity means the total storage amount of each material onsite, regardless of container size.

If your facility stores any regulated substances in OUTDOOR storage areas onsite, please list the specific types of materials below.

Material Name (Chemical or Brand)	Material Use	Storage Container Type ¹	Storage Container Material	Max. Quantity Stored Onsite (with Units)	Secondary containment structure present? If yes, describe containment, including material and size.		How often is the area inspected?	Is the storage area covered?
					<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Example: Diesel	Truck Fuel	AST	Steel	500 Gallons	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Concrete dike, 750 gallons	Weekly	Yes
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			
					<input type="checkbox"/> Yes <input type="checkbox"/> No			

¹Examples: aboveground storage tank (AST), underground storage tank (UST), drum, bags, bottles, pails

Attachment 4

Stormwater Treatment Inspection Report



Annual Inspection Report

Vertical Flow-Thru Stormwater Treatment Unit (Filter Insert)

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Manufacturer & Model of Treatment Unit(s) Installed: _____

Number of Treatment Units Installed / Inspected: _____

Observed Condition of Treatment Unit(s)

Leaves and/or other debris in sediment chamber and / or filter media

Leaves, debris and sediment in and around treatment unit is restricting stormwater flow into and through unit

Sediment

Less than 1 inch of sediment in sediment chamber:

Several inches of sediment in sediment chamber:

More than 5 inches of sediment in sediment chamber:

Filter Media

Filter media fairly clean, only requiring surface cleaning

Filter media is dark and covered with a sediment layer

Filter media is completely plugged with sediment and/or debris

The unit must be maintained on a regular schedule to prevent saturation of the filter media by contaminants and blockage from sedimentation and debris buildup. Maintenance can be accomplished by removing cover, vacuuming debris and sediment from the sediment chamber with a wet/dry vacuum and replacing the filter media if necessary. A typical recommended change-out of the filter media would be every 4 to 6 months. Sedimentation maintenance may be needed more often depending on the location and season. A clean-out after heavy leaf fall is recommended.

Maintenance / Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Sediment & debris need to be removed and filter media cleaned

Sediment & debris need to be removed and filter media replaced

Unit is not functioning properly and needs to be repaired

Item(s) needing repair: _____

Maintenance / Repair Performed on Treatment Unit(s)

Sediment chamber has been cleaned

Filter media has been cleaned

Filter media has been replaced

Necessary repairs have been made

Necessary repairs have not been made

but, are scheduled to be completed

Comments: _____

Please Email this report to: Environmental Support Specialist, druxts@kalamazoocty.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Note: Please contact the manufacturer or supplier of your stormwater treatment unit for detailed instructions on maintenance of your particular unit.



Annual Inspection Report

Horizontal Flow In-Line Stormwater Treatment Unit

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: 9

Inspector's Name: 9

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Manufacturer & Model of Treatment Unit(s) Installed: _____

Number of Treatment Units Installed / Inspected: _____

Observed Condition of Treatment Unit(s)

The depth of oil and sediment in the unit can be measured from the ground surface.

Sediment

Less than 1 inch of sediment on bottom

1 to 7 inches of sediment on bottom

More than 7 inches of sediment on bottom

Oil

No oil on water surface

Oily sheen on water surface

More than 1/8 inch of oil on water surface

Generally, annual maintenance is recommended but the required maintenance frequency will vary with the amount of pollution on your site (number of hydrocarbon spills, amount of sediment, etc.). It is recommended that the frequency of maintenance be increased or reduced based on local conditions. Maintenance should be performed immediately after an oil spill or once the sediment depth reaches the values specified in your unit manufacturer's maintenance specifications. Maintenance of these units is performed from the surface via vacuum truck. These units must be maintained to ensure long-term environmental protection through continual performance.

Maintenance / Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Vacuuming of pits and/or sediment needed

Unit is **not** functioning properly and needs to be repaired

Item(s) needing repair: _____

Maintenance / Repair Performed on Treatment Unit(s)

Oil and/or sediment has been vacuumed out of unit

Necessary repairs have been made

Necessary Repairs have not been made but are scheduled to be completed

Comments: _____

Please Email this report to: Environmental Support Specialist, drusts@kalamazocounty.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the manufacturer or supplier of your stormwater treatment unit for detailed instructions on maintenance of your particular model.



Annual Inspection Report

Stormwater Basin Treatment Unit or General BMP

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Stormwater BMP Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Stormwater BMP type installed: _____

Number of Stormwater BMPs inspected: _____

Observed Condition of Stormwater BMP

Scouring, erosion or loss of vegetation

Mosquito breeding

present Debris or trash present

Algae bloom

Excessive vegetation

Sediment accumulation in the basin

Generally, annual maintenance is recommended but the required maintenance frequency will vary with the amount of pollution on your site (number of hydrocarbon spills, amount of sediment, etc.). It is recommended that the frequency of maintenance be increased or reduced based on local conditions. Maintenance should be performed immediately after an environmental spill. Stormwater BMP(s) must be maintained to ensure long-term environmental protection through continual performance.

Maintenance/Repair Needed on Stormwater BMP(s)

No repair or maintenance needed at this time

BMP Structure is **not** functioning properly and needs to be repaired. Item(s) needing repair: _____

Maintenance/Repair Performed on Stormwater BMP(s)

Necessary Repairs have not been made but are scheduled to be completed

Necessary repairs have been made

Comments: _____

Please Email this report to: Environmental Support Specialist, drusts@kalamazocounty.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the installer of your stormwater BMP(s) for specific maintenance requirements



Annual Inspection Report

Bioretention Basin (Rain Garden) Stormwater Treatment Unit

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Approximate Square Footage of Treatment Unit(s) installed: _____

Number of Treatment Units installed/inspected: _____

Observed Condition of Treatment Unit(s)

Leaves and/or other debris accumulated on surface of unit:

Leaves, debris and sediment in and around treatment unit is restricting stormwater flow into and through unit

Erosion Control

Unit has at least 2 inches of mulch depth

Unit has < 2 inches of mulch depth

Unit has exposed soil and/or signs of soil washout

Vegetation

Healthy, diverse vegetation covering >85% of unit

Vegetation is overgrown or showing signs of stress

Vegetation is sparse with areas of exposed mulch or soil

The unit must be maintained on a regular schedule to prevent blockage from sedimentation and debris buildup, prevent mulch and soil erosion, and maintain healthy vegetative cover. Maintenance can be accomplished by watering, removing debris and excess vegetative growth, re-applying mulch, and adding new plants if needed. Watering and mulch application maintenance may be needed more often depending on the location and season. Monitoring for poor drainage (continued ponding six days after heavy rainfall) is recommended.

Maintenance/Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Vegetation requires pruning or additional plantings added

Sediment & debris need to be removed

Unit is **not** functioning properly and needs to be repaired

Mulch needs to be re-applied

Item(s) needing repair: _____

Maintenance/Repair Performed on Treatment Unit(s)

Sediment and debris have been removed

Necessary repairs have been made

Mulch has been re-applied

Necessary repairs have not been done

Vegetation health has been improved

but are scheduled to be completed

Comments: _____

Please Email this report to: Environmental Support Specialist, etrusts@kalamazooecity.org

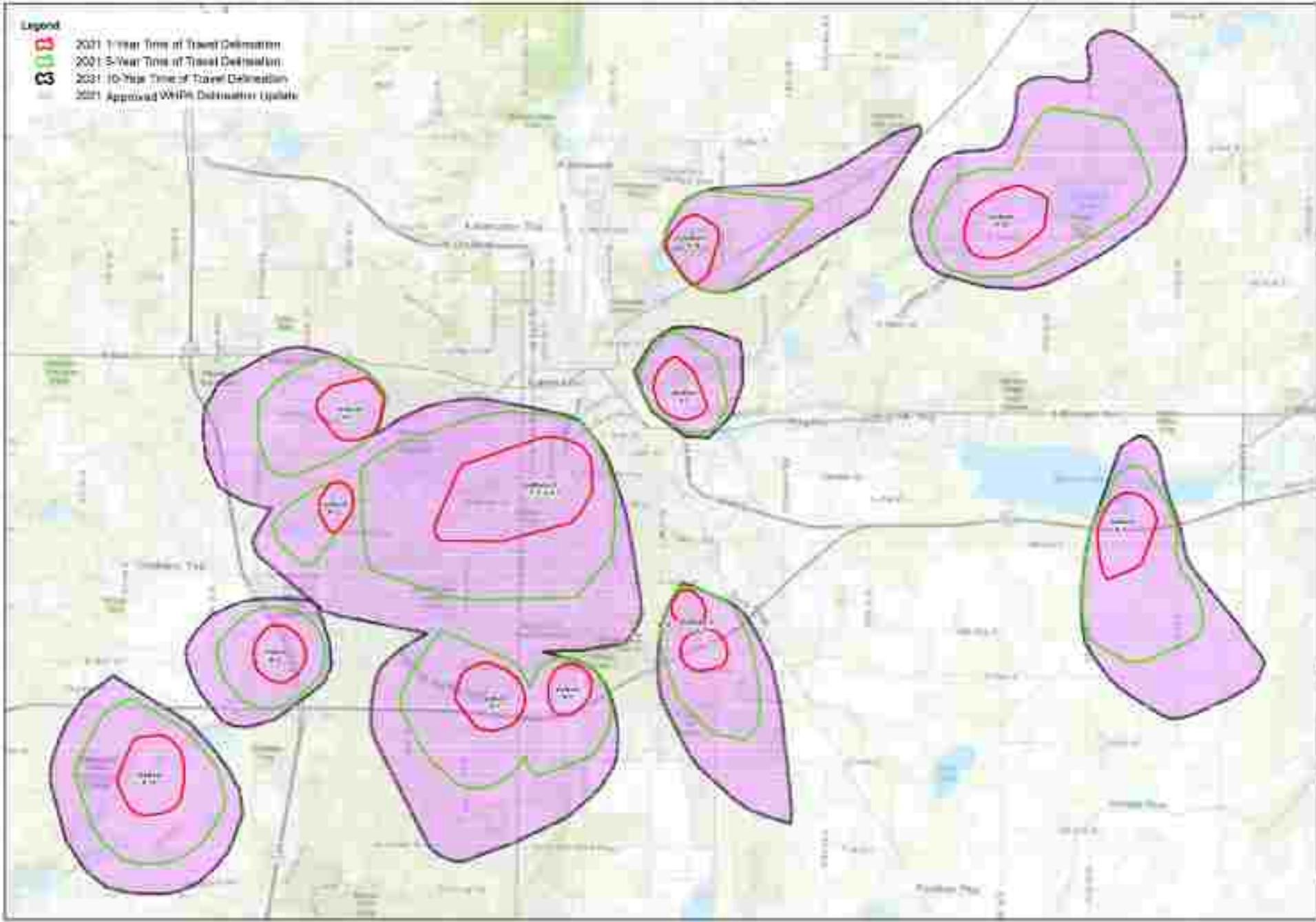
For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the installer of your stormwater BMP(s) for specific maintenance requirements

Section 8: Attachment D

Wellhead Protection Overlay Map

(Ordinance 1825)



CITY OF KALAMAZOO
1000 WEST MAIN STREET, KALAMAZOO, MI 49001

2021 Approved 10-Year Time of Travel Delimitation Update
 APPROVAL: APRIL 2021, DUBUQUE, IA

DATE	ISSUE
04/21/2021	1.0000
07/14/2021	1.0000



Section 8: Attachment E

Site Plan Review Worksheets: Stormwater Calculations,
MTD, and Channel Protection



Annual Inspection Report

Vertical Flow-Thru Stormwater Treatment Unit (Filter Insert)

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Manufacturer & Model of Treatment Unit(s) Installed: _____

Number of Treatment Units Installed / Inspected: _____

Observed Condition of Treatment Unit(s)

Leaves and/or other debris in sediment chamber and / or filter media

Leaves, debris and sediment in and around treatment unit is restricting stormwater flow into and through unit

Sediment

Less than 1 inch of sediment in sediment chamber:

Several inches of sediment in sediment chamber:

More than 5 inches of sediment in sediment chamber:

Filter Media

Filter media fairly clean, only requiring surface cleaning

Filter media is dark and covered with a sediment layer

Filter media is completely plugged with sediment and/or debris

The unit must be maintained on a regular schedule to prevent saturation of the filter media by contaminants and blockage from sedimentation and debris buildup. Maintenance can be accomplished by removing cover, vacuuming debris and sediment from the sediment chamber with a wet/dry vacuum and replacing the filter media if necessary. A typical recommended change-out of the filter media would be every 4 to 6 months. Sedimentation maintenance may be needed more often depending on the location and season. A clean-out after heavy leaf fall is recommended.

Maintenance / Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Sediment & debris need to be removed and filter media cleaned

Sediment & debris need to be removed and filter media replaced

Unit is not functioning properly and needs to be repaired

Item(s) needing repair: _____

Maintenance / Repair Performed on Treatment Unit(s)

Sediment chamber has been cleaned

Filter media has been cleaned

Filter media has been replaced

Necessary repairs have been made

Necessary repairs have not been made

but, are scheduled to be completed

Comments: _____

Please Email this report to: Environmental Support Specialist, druxts@kalamazooocity.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Note: Please contact the manufacturer or supplier of your stormwater treatment unit for detailed instructions on maintenance of your particular unit.



Annual Inspection Report

Horizontal Flow In-Line Stormwater Treatment Unit

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: 9

Inspector's Name: 9

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Manufacturer & Model of Treatment Unit(s) Installed: _____

Number of Treatment Units Installed / Inspected: _____

Observed Condition of Treatment Unit(s)

The depth of oil and sediment in the unit can be measured from the ground surface.

Sediment

Less than 1 inch of sediment on bottom

1 to 7 inches of sediment on bottom

More than 7 inches of sediment on bottom

Oil

No oil on water surface

Oily sheen on water surface

More than 1/8 inch of oil on water surface

Generally, annual maintenance is recommended but the required maintenance frequency will vary with the amount of pollution on your site (number of hydrocarbon spills, amount of sediment, etc.). It is recommended that the frequency of maintenance be increased or reduced based on local conditions. Maintenance should be performed immediately after an oil spill or once the sediment depth reaches the values specified in your unit manufacturer's maintenance specifications. Maintenance of these units is performed from the surface via vacuum truck. These units must be maintained to ensure long-term environmental protection through continual performance.

Maintenance / Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Vacuuming of pits and/or sediment needed

Unit is **not** functioning properly and needs to be repaired

Item(s) needing repair: _____

Maintenance / Repair Performed on Treatment Unit(s)

Oil and/or sediment has been vacuumed out of unit

Necessary repairs have been made

Necessary Repairs have not been made but are scheduled to be completed

Comments: _____

Please Email this report to: Environmental Support Specialist, drusts@kalamazocounty.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the manufacturer or supplier of your stormwater treatment unit for detailed instructions on maintenance of your particular model.



Annual Inspection Report

Stormwater Basin Treatment Unit or General BMP

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Stormwater BMP Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Stormwater BMP type installed: _____

Number of Stormwater BMPs inspected: _____

Observed Condition of Stormwater BMP

Scouring, erosion or loss of vegetation

Mosquito breeding

present Debris or trash present

Algae bloom

Excessive vegetation

Sediment accumulation in the basin

Generally, annual maintenance is recommended but the required maintenance frequency will vary with the amount of pollution on your site (number of hydrocarbon spills, amount of sediment, etc.). It is recommended that the frequency of maintenance be increased or reduced based on local conditions. Maintenance should be performed immediately after an environmental spill. Stormwater BMP(s) must be maintained to ensure long-term environmental protection through continual performance.

Maintenance/Repair Needed on Stormwater BMP(s)

No repair or maintenance needed at this time

BMP Structure is **not** functioning properly and needs to be repaired. Item(s) needing repair: _____

Maintenance/Repair Performed on Stormwater BMP(s)

Necessary Repairs have not been made but are scheduled to be completed

Necessary repairs have been made

Comments: _____

Please Email this report to: Environmental Support Specialist, drusts@kalamazocounty.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the installer of your stormwater BMP(s) for specific maintenance requirements



Annual Inspection Report

Bioretention Basin (Rain Garden) Stormwater Treatment Unit

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Approximate Square Footage of Treatment Unit(s) installed: _____

Number of Treatment Units installed/inspected: _____

Observed Condition of Treatment Unit(s)

Leaves and/or other debris accumulated on surface of unit

Leaves, debris and sediment in and around treatment unit is restricting stormwater flow into and through unit

Erosion Control

Unit has at least 2 inches of mulch depth

Unit has < 2 inches of mulch depth

Unit has exposed soil and/or signs of soil washout

Vegetation

Healthy, diverse vegetation covering >85% of unit

Vegetation is overgrown or showing signs of stress

Vegetation is sparse with areas of exposed mulch or soil

The unit must be maintained on a regular schedule to prevent blockage from sedimentation and debris buildup, prevent mulch and soil erosion, and maintain healthy vegetative cover. Maintenance can be accomplished by watering, removing debris and excess vegetative growth, re-applying mulch, and adding new plants if needed. Watering and mulch application maintenance may be needed more often depending on the location and season. Monitoring for poor drainage (continued ponding six days after heavy rainfall) is recommended.

Maintenance/Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Vegetation requires pruning or additional plantings added

Sediment & debris need to be removed

Unit is **not** functioning properly and needs to be repaired

Mulch needs to be re-applied

Item(s) needing repair: _____

Maintenance/Repair Performed on Treatment Unit(s)

Sediment and debris have been removed

Necessary repairs have been made

Mulch has been re-applied

Necessary repairs have not been done

Vegetation health has been improved

but are scheduled to be completed

Comments: _____

Please Email this report to: Environmental Support Specialist, etrusts@kalamazooecity.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the installer of your stormwater BMP(s) for specific maintenance requirements

Section 8: Attachment F
Wellhead Protection and
Stormwater Compliance Checklist

Site Plan Review - Wellhead Protection and Stormwater Compliance Checklist

Site Name:			
Site Address:			
Wellhead Protection	Answer	Comments	
Is the site within a Wellhead Protection Area (WHPA)?			
If yes, 1-year, 5-year, or 10-year Capture Zone?			
If yes, which Water Pumping Station(s)?			
Zoning Type?			
See Performance Standards, Section 5.3 Table 4 for stormwater discharge strategies in WHPAs.			
Proposed Stormwater Discharge Strategy - surface water, groundwater, combination?			
In groundwater infiltration with a WHPA, is pre-treatment required?			
Are there Hazardous Substances currently or proposed to be stored on the property?			
If yes, review Performance Standards for requirements.			
Are there any existing out-of service wells, abandoned wells, or cisterns on the property?			
CSI WHPA listing?			
Does the property have any known or suspected soil and/or groundwater contamination?			
Is the property on any State or Federal lists associated with contamination?			
Is the property currently or being proposed to be a Brownfield?			
Is the property currently or being proposed to be an NFP site?			
If stormwater infiltration is being proposed on a site with known soil and/or groundwater contamination, EGLE RRD Staff (Erica Bays for Part 201 at 269-350-0080 or BaysE@michigan.gov, or Adam Wrubel for Part 213 at 269-308-1495 or WrubelA1@michigan.gov) must be contacted to discuss and to obtain approval.			
Does the property have any underground or above-ground storage tanks?			
Distribute Required Chemical Storage Inventory Information			
	Indicate Completion (✓)	Indicate Review/Compliance (✓)	
Stormwater	Site Size:		
	<u>Category</u>	<u>Acres/ft²</u>	<u>Comments</u>
Size of Development/Re-Development?			
Small Site ≤ 1/2 acre (21,780 ft ²)			
Medium Site ≥ 1/2 (21,780 ft ²) acre to 1 acre (43,560 ft ²)			
Large Site ≥ 1 acre (43,560 ft ²)			
See Performance Standards, Section 5.2, Table 3 for applicable Standards			
	Indicate Completion (✓)	Indicate Review/Compliance (✓)	
<u>If project is a Medium or Large Size, applicant is required to complete:</u>			
Uniform Stormwater Standard 1: Water Quality Treatment Volume Worksheet			
Manufactured Treatment Device Worksheet, if device is proposed to be used as pre-treatment strategy. (All Stormwater Manufactured Treatment Devices must be NJCAT verified and NJDEP Certified)			
Uniform Stormwater Standard 2: Channel Protection Volume Worksheet			
Requirement for Stormwater Operations and Maintenance Agreement			
Does the proposed project result in ≥ 20 new parking spaces and/or exceed 6,000 ft ² area?			
If there is a surface water feature on or contiguous to the property, see buffer requirements in the Performance Standards, Section 5.2, Table 3.			

Section 8: Attachment G

Stormwater Agreement and Instructions Page



COMPLETING THE STORMWATER AGREEMENT

Please follow these specific instructions to complete your Stormwater Agreement and Exhibits A, B and C. This agreement must be printed single-sided when sending in the original. There is an example Stormwater Agreement, with Exhibits, attached for your reference.

1. Page 1, first paragraph:
 - a. Leave the effective date blank.
 - b. Add name and status of landowner (i.e. individual(s) or companies) and add the landowner's address.
2. Page 1, third paragraph (Recital B.):
 - a. Add the address of the landowner's real estate including zip code. If the address has been changed, indicate both the newest/final address that has been approved by the City Assessor, and the previously known address(es). *Example: 210 Main Street (previously 200 Main Street and 100 Mill Street)*
 - b. Add the parcel number(s) of the real estate.
3. Page 1, fourth paragraph (Recital C.): Do not change this paragraph; it includes all generic landowner uses and does not have to be specific to the real estate.
4. Page 5: Notarized landowner's signature:
 - a. Add landowner's signature(s). Below that; add the landowner's printed name(s) and their company title if applicable.
 - b. In the "Forgoing Instrument" section, add date of signing and landowner's printed name.
 - c. Add notary signature, printed notary name, stamp and expiration date, and raised seal.
5. Attach Exhibits: Exhibits must be simple and readable when printed in black and white on 8.5" x 11" paper.
 - a. Exhibit A – Legal description of the real estate for which this Agreement applies.
 - b. Exhibit B – Map(s) with location of Property and accurate location of each stormwater BMP. These simple maps are for the City to locate and inspect the BMPs when needed. *Engineered design prints generally are too detailed and not readable or recordable in this format.*
 - c. Exhibit C – List all stormwater BMPs (manufacturer, model) and reference their location on Exhibit B.
6. Submit a draft to: Jean Talanda, Environmental Programs Manager, talandaj@kalamazoo-city.org.
7. After approval of the draft agreement, provide the signed original agreement with all exhibits and this form via mail or hand delivery to:
Jean Talanda, Environmental Programs Manager, 1415 N. Harrison, Kalamazoo, MI 49007-2565
8. The City's Director of Public Services will sign page 6 of the agreement and notarize. The City will then have the document recorded and will return a digital copy of the recorded document to the owner once received.
9. Provide the "Return Agreement Information" in the spaces below for the City to return a copy of the recorded Stormwater Agreement:

Site Plan Name & address(s) _____

Contact: _____

Email _____ Phone number _____

Mail address _____

ANNUAL STORMWATER TREATMENT UNIT INSPECTION REPORT CONTACT

This Agreement requires an annual submittal of a Stormwater Treatment Inspection Report to the City. We will provide you with instructions and forms upon the recording of your Stormwater Agreement. Please provide contact information for the Annual Inspection Report submittal below:

Contact _____

Email _____ Phone number _____

Mail address _____

STORMWATER AGREEMENT

THIS AGREEMENT, effective _____, 20____, between the City of Kalamazoo, a Michigan municipal corporation, whose address is 241 West South Street, Kalamazoo, Michigan, Kalamazoo, Michigan 49007 (City) and _____ [status of landowner; i.e. individual(s) or companies] whose address is _____ (Landowner).

Recitals:

- A. The City is regulated under the U.S. Environmental Protection Agency's (EPA) Phase II Stormwater Program since it has a municipal separate storm sewer system (identified in the Performance Standards as MS4). Therefore, the City is required to have a National Pollutant Discharge Elimination System (NPDES) Permit for its discharge of stormwater. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) administers the NPDES permit program for the State of Michigan (33 U.S.C. 1251 et seq., P.L. 92-500, 95-217) under Part 31, Water Resources Protection, of Michigan's "Natural Resources and Environmental Protection Act", 1994 PA 451 (NREPA).
- B. Landowner owns real estate in the City at _____, Kalamazoo, MI 490____ - Parcel _____ and which is more specifically described in Exhibit A (Property).
- C. Landowner uses the Property for multi-family residential, commercial, and industrial purposes, or a combination of those uses. Landowner is making improvements to the Property that require approval under the City's Site Plan Review process, or is modifying the existing stormwater discharge system on the Property that either impacts the City's system or the retention of stormwater on the Property. As a result of those uses, improvements or modifications, Landowner agrees: (i) to install and maintain stormwater best management practices (BMPs) on the Property in accordance with approved plans and conditions; and (ii) to ensure that the BMPs continue serving the intended function in perpetuity.
- D. Before signing this Agreement the Landowner, including its representatives, contractors or agents, has reviewed or had the opportunity to review the Performance Standards, work sheets or other documents maintained by the City relating to the City's regulation of its Stormwater Program and this Agreement.

THEREFORE, in consideration of the above recitals and the covenants, conditions, and restrictions stated below, the parties agree as follows:

1. Recitals. The above recitals are acknowledged as true and correct, and are incorporated by reference into this paragraph.
2. Installation and Maintenance. Landowner is solely responsible for the installation, maintenance and repair of the stormwater BMPs.
3. Inspections and Repairs. Landowner shall regularly inspect, maintain, repair or replace the private stormwater BMPs consistent with the Manufactured Treatment Device (identified in the Performance Standards as MTD) as recommended by the manufacturer, and those recommendations provided in the "Low Impact Development Manual for Michigan – A Design Guide for Implementers and Reviewers" (Southeast Michigan Council of Governments and MDEQ, 2008), and "Michigan Nonpoint Source Best Management Practices Manual" (MDEQ, 2017).
4. Submission of Reports. Landowner shall annually submit a report to the City – on the form provided by the City – regarding stormwater BMPs Operation & Maintenance for each of the MTDs and other BMPs. Landowner shall deliver the report to the City's Water Programs Manager either by mail to 1415 N. Harrison Street, Kalamazoo, MI 49007 or via e-mail to the current manager, talandaj@kalamazoo.org, within 30 calendar days of the inspection date.
5. Modifications to the Stormwater System. Landowner shall contact the City for approval prior to any design modifications to the stormwater treatment and/or conveyance system on the Property.
6. City's Access to the Property. Landowner, its successors and assigns, hereby grants the City, its authorized agents and employees, the right to enter upon the Property to inspect the stormwater BMPs whenever the City reasonably considers an inspection necessary in carrying out the intent and purpose of this Agreement. For example, an inspection may occur: (i) to follow-up on reported deficiencies in Landowner's exercise of stormwater BMPs; or (ii) to address lack of submitted documentation Landlord is required to submit to the City; or (iii) to respond to citizen complaints. The City shall provide Landowner with copies of the inspection findings, including any directive to perform maintenance, repairs or replacements, if necessary, to the stormwater conveyance system on the Property.
7. Default by Landowner/Remedies. If Landowner fails to maintain the stormwater BMPs and associated stormwater conveyance system in good working condition acceptable to the City, the City may enter upon the Property and take whatever steps necessary to correct deficiencies, including those identified in the inspection report. Landowner is responsible to pay the costs the City incurred for those repairs. The City will provide an itemized list of the repairs in an invoice to

Landowner, which is due within 30 days of the date on the invoice. To secure any amount owed by Landowner to the City under this Paragraph, the City has the right to place a lien against the Property in the same manner as delinquent taxes, including accruing interest, penalties and administrative expenses until the lien is fully satisfied.

It is expressly understood and agreed that the City is under no obligation to routinely inspect, maintain or repair the stormwater BMPs or stormwater conveyance system; and in no event shall this Agreement be construed to impose those obligations on the City.

8. No Liability of the City. This Agreement imposes no liability of any kind whatsoever on the City and the Landowner agrees to hold the City harmless from any liability if the stormwater BMPs and/or stormwater conveyance system failure to operate properly.
9. Compliance with other Laws. This Agreement does not replace or change the requirements of the Landowner to comply with all other applicable federal, state and local laws, rules and regulations; specifically including, without limitation, Ordinance No. 1825 (Wellhead Protection Overlay), Ordinance No. 1826 (Performance Standards for Groundwater Protection Within Wellhead Protection Capture Zones and Stormwater Management) and Chapter 29 of the Code of Ordinances (Stormwater System).
10. Binding Effect/Third Parties. This Agreement is binding on and shall inure to the benefit of the parties to this Agreement and their respective successors. Neither party may assign this Agreement without the prior written consent of the other party. The parties do not intend to confer any benefits on any person, firm, corporation, or other entity which is not party to this Agreement.
11. Governing Law. This Agreement is governed under applicable Michigan law. Both parties had the assistance of or the opportunity to seek legal counsel regarding the signing of this Agreement. Therefore, no construction or ambiguity of this Agreement is resolved against either party.
12. Waiver. A party does not waive any of its rights under this Agreement if that party fails to complain about an act or omission by the other party, no matter the duration of that act or omission. And a waiver by either party, whether expressed or implied, of any breach of a provision in this Agreement is not considered a waiver or consent to any subsequent breach of this same or other provision.

Exhibits. This Agreement includes the following exhibits Landowner agrees to provide:

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 BMP affected by this Agreement.

Exhibit C: A List of all stormwater BMPs, including Manufacturer, Model, and locational reference to Exhibit B.

13. Headings. Headings in this Agreement are for convenience only and are not intended to interpret or construe its provisions.
14. Entire Agreement/Counterparts. This Agreement supersedes all agreements previously made between the parties relating to the subject matter. There are no other understandings or agreements between them. The parties may sign this Agreement in counterparts, which together shall comprise a single agreement, and the effective date for which is the date it is signed by both parties.
15. Authorization. Each of the parties represents and warrants to the other that this Agreement and its execution by the individual(s) on its behalf are authorized by the city commission, the board of directors or other governing body or organizational agreement of that party.
16. Definitions. The terms set forth in this Agreement shall have the same meaning as commonly used, except any term that is defined under statutes, ordinances or laws identified above, or any other applicable state statute shall have the meaning set forth under that ordinance, statute or law, including any subsequent amendments.
17. Recording. The City reserves the right to file a memorandum reflecting the existence of this Agreement with the Kalamazoo County Register of Deeds.

LANDOWNER

By: Name of Signee

Its: Title of Signee

STATE OF MICHIGAN

}

} ss.

COUNTY OF KALAMAZOO

}

The foregoing instrument was acknowledged before me on _____,
20____, by Name of Signee _____.

Notary Public

Kalamazoo County, Michigan

My commission expires: _____

CITY OF KALAMAZOO

By: James J. Baker, P.E.
Its: Director of Public Services

STATE OF MICHIGAN }
 }
COUNTY OF KALAMAZOO } ss.
 }

The foregoing instrument was acknowledged before me on _____,
20__ by James J. Baker, Director of Public Services, City of Kalamazoo.

Notary Public
Kalamazoo County, Michigan
My commission expires: _____

Prepared By & After Recording Return To:
The Office of City Attorney - Clyde Robinson, City Attorney
241 West South Street
Kalamazoo, MI 49007
(269) 337-8185

BEYOND THIS PAGE IS AN
EXAMPLE STORMWATER AGREEMENT.
THIS IS FOR REFERENCE ONLY. PLEASE DO NOT
USE THESE PAGES.

EXAMPLE AGREEMENT

STORMWATER AGREEMENT

THIS AGREEMENT, effective _____, 20____, between the City of Kalamazoo, a Michigan municipal corporation, whose address is 241 West South Street, Kalamazoo, Michigan, Kalamazoo, Michigan 49007 (City) and Blue Water Resources Inc. [status of landowner, i.e. individual(s) or companies] whose address is 456 S. Trion Ave, Kalamazoo, MI 49001 (Landowner).

Recitals:

- A. The City is regulated under the U.S. Environmental Protection Agency's (EPA) Phase II Stormwater Program since it has a municipal separate storm sewer system (identified in the Performance Standards as MS4). Therefore, the City is required to have a National Pollutant Discharge Elimination System (NPDES) Permit for its discharge of stormwater. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) administers the NPDES permit program for the State of Michigan (33 U.S.C. 1251 et seq., P.L. 92-500, 95-217) under Part 31, Water Resources Protection, of Michigan's "Natural Resources and Environmental Protection Act", 1994 PA 451 (NREPA).
- B. Landowner owns real estate in the City at 898 East Atlantica Blvd., Kalamazoo, MI 49008 - Parcel No(s) 07-13-198-009 - and which is more specifically described in Exhibit A (Property).
- C. Landowner uses the Property for multi-family residential, commercial, and industrial purposes, or a combination of those uses. Landowner is making improvements to the Property that require approval under the City's Site Plan Review process, or is modifying the existing stormwater discharge system on the Property that either impacts the City's system or the retention of stormwater on the Property. As a result of those uses, improvements or modifications, Landowner agrees: (i) to install and maintain stormwater best management practices (BMPs) on the Property in accordance with approved plans and conditions; and (ii) to ensure that the BMPs continue serving the intended function in perpetuity.
- D. Before signing this Agreement the Landowner, including its representatives, contractors or agents, has reviewed or had the opportunity to review the Performance Standards, work sheets or other documents maintained by the City relating to the City's regulation of its Stormwater Program and this Agreement.

EXAMPLE AGREEMENT

THEREFORE, in consideration of the above recitals and the covenants, conditions, and restrictions stated below, the parties agree as follows:

1. Recitals. The above recitals are acknowledged as true and correct, and are incorporated by reference into this paragraph.
2. Installation and Maintenance. Landowner is solely responsible for the installation, maintenance and repair of the stormwater BMPs.
3. Inspections and Repairs. Landowner shall regularly inspect, maintain, repair or replace the private stormwater BMPs consistent with the Manufactured Treatment Device (identified in the Performance Standards as MTD) as recommended by the manufacturer, and those recommendations provided in the "Low Impact Development Manual for Michigan – A Design Guide for Implementers and Reviewers" (Southeast Michigan Council of Governments and MDEQ, 2008), and "Michigan Nonpoint Source Best Management Practices Manual" (MDEQ, 2017).
4. Submittal of Reports. Landowner shall annually submit a report to the City – on the form provided by the City – regarding stormwater BMPs Operation & Maintenance for each of the MTDs and other BMPs. Landowner shall deliver the report to the City's Water Programs Manager either by mail to 1415 N. Harrison Street, Kalamazoo, MI 49007, via fax at (269) 337-8535, or via e-mail to the current manager, talandaj@kalamazoo-city.org, within 30 calendar days of the inspection date.
5. Modifications to the Stormwater System. Landowner shall contact the City for approval prior to any design modifications to the stormwater treatment and/or conveyance system on the Property.
6. City's Access to the Property. Landowner, its successors and assigns, hereby grants the City, its authorized agents and employees, the right to enter upon the Property to inspect the stormwater BMPs whenever the City reasonably considers an inspection necessary in carrying out the intent and purpose of this Agreement. For example, an inspection may occur: (i) to follow-up on reported deficiencies in Landowner's exercise of stormwater BMPs; or (ii) to address lack of submitted documentation Landowner is required to submit to the City; or (iii) to respond to citizen complaints. The City shall provide Landowner with copies of the inspection findings, including any directive to perform maintenance, repairs or replacements, if necessary, to the stormwater conveyance system on the Property.
7. Default by Landowner/Remedies. If Landowner fails to maintain the stormwater BMPs and associated stormwater conveyance system in good working condition acceptable to the City, the City may enter upon the Property and take whatever steps necessary to correct deficiencies, including those identified in the inspection report. Landowner is responsible to pay the costs the City incurred for those repairs. The City will provide an itemized list of the repairs in an invoice to

EXAMPLE AGREEMENT

Landowner, which is due within 30 days of the date on the invoice. To secure any amount owed by Landowner to the City under this Paragraph, the City has the right to place a lien against the Property in the same manner as delinquent taxes, including accruing interest, penalties and administrative expenses until the lien is fully satisfied.

It is expressly understood and agreed that the City is under no obligation to routinely inspect, maintain or repair the stormwater BMPs or stormwater conveyance system; and in no event shall this Agreement be construed to impose those obligations on the City.

8. No Liability of the City. This Agreement imposes no liability of any kind whatsoever on the City and the Landowner agrees to hold the City harmless from any liability if the stormwater BMPs and/or stormwater conveyance system failure to operate properly.
9. Compliance with other Laws. This Agreement does not replace or change the requirements of the Landowner to comply with all other applicable federal, state and local laws, rules and regulations; specifically including, without limitation, Ordinance No. 1825 (Wellhead Protection Overlay), Ordinance No. 1826 (Performance Standards for Groundwater Protection Within Wellhead Protection Capture Zones and Stormwater Management) and Chapter 29 of the Code of Ordinances (Stormwater System).
10. Binding Effect/Third Parties. This Agreement is binding on and shall inure to the benefit of the parties to this Agreement and their respective successors. Neither party may assign this Agreement without the prior written consent of the other party. The parties do not intend to confer any benefits on any person, firm, corporation, or other entity which is not party to this Agreement.
11. Governing Law. This Agreement is governed under applicable Michigan law. Both parties had the assistance of or the opportunity to seek legal counsel regarding the signing of this Agreement. Therefore, no construction or ambiguity of this Agreement is resolved against either party.
12. Waiver. A party does not waive any of its rights under this Agreement if that party fails to complain about an act or omission by the other party, no matter the duration of that act or omission. And a waiver by either party, whether expressed or implied, of any breach of a provision in this Agreement is not considered a waiver or consent to any subsequent breach of this same or other provision.

EXAMPLE AGREEMENT

Exhibits. This Agreement includes the following exhibits Landowner agrees to provide:

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 BMP affected by this Agreement.

Exhibit C: A List of all stormwater BMPs, including Manufacturer, Model, and locational reference to Exhibit B.

13. Headings. Headings in this Agreement are for convenience only and are not intended to interpret or construe its provisions.
14. Entire Agreement/Counterparts. This Agreement supersedes all agreements previously made between the parties relating to the subject matter. There are no other understandings or agreements between them. The parties may sign this Agreement in counterparts, which together shall comprise a single agreement, and the effective date for which is the date it is signed by both parties.
15. Authorization. Each of the parties represents and warrants to the other that this Agreement and its execution by the individual(s) on its behalf are authorized by the city commission, the board of directors or other governing body or organizational agreement of that party.
16. Definitions. The terms set forth in this Agreement shall have the same meaning as commonly used, except any term that is defined under statutes, ordinances or laws identified above, or any other applicable state statute shall have the meaning set forth under that ordinance, statute or law, including any subsequent amendments.
17. Recording. The City reserves the right to file a memorandum reflecting the existence of this Agreement with the Kalamazoo County Register of Deeds.

EXAMPLE AGREEMENT

LANDOWNER

Sebastian Flounder

By: Sebastian Flounder
Its' Owner of Blue Water Resources Inc.

STATE OF MICHIGAN }
 } 55.
COUNTY OF KALAMAZOO }

The foregoing instrument was acknowledged before me on July 7th
2022, by Sebastian Flounder

Ursula A. Scuttle
Ursula A. Scuttle Notary Public
Kalamazoo County, Michigan
My commission expires: 2025

URSULA A. SCUTTLE
NOTARY PUBLIC - STATE OF MICHIGAN
COUNTY OF KALAMAZOO
My Commission Expires: Jul 13, 2025
Acting in the County of Kalamazoo



EXAMPLE AGREEMENT

CITY OF KALAMAZOO

By: James J. Baker, P.E.
Its: Director of Public Services

STATE OF MICHIGAN }
 }
 } ss.
COUNTY OF KALAMAZOO }

The foregoing instrument was acknowledged before me on _____,
20___, by James J. Baker, Director of Public Services, City of Kalamazoo.

Notary Public
Kalamazoo County, Michigan
My commission expires: _____

Prepared By & After Recording Return To:
The Office of City Attorney - Clyde Robinson, City Attorney
241 West South Street
Kalamazoo, MI 49007
(269) 337-8185

EXAMPLE AGREEMENT EXHIBIT

EXHIBIT A

898 ATLANTICA BLVD.

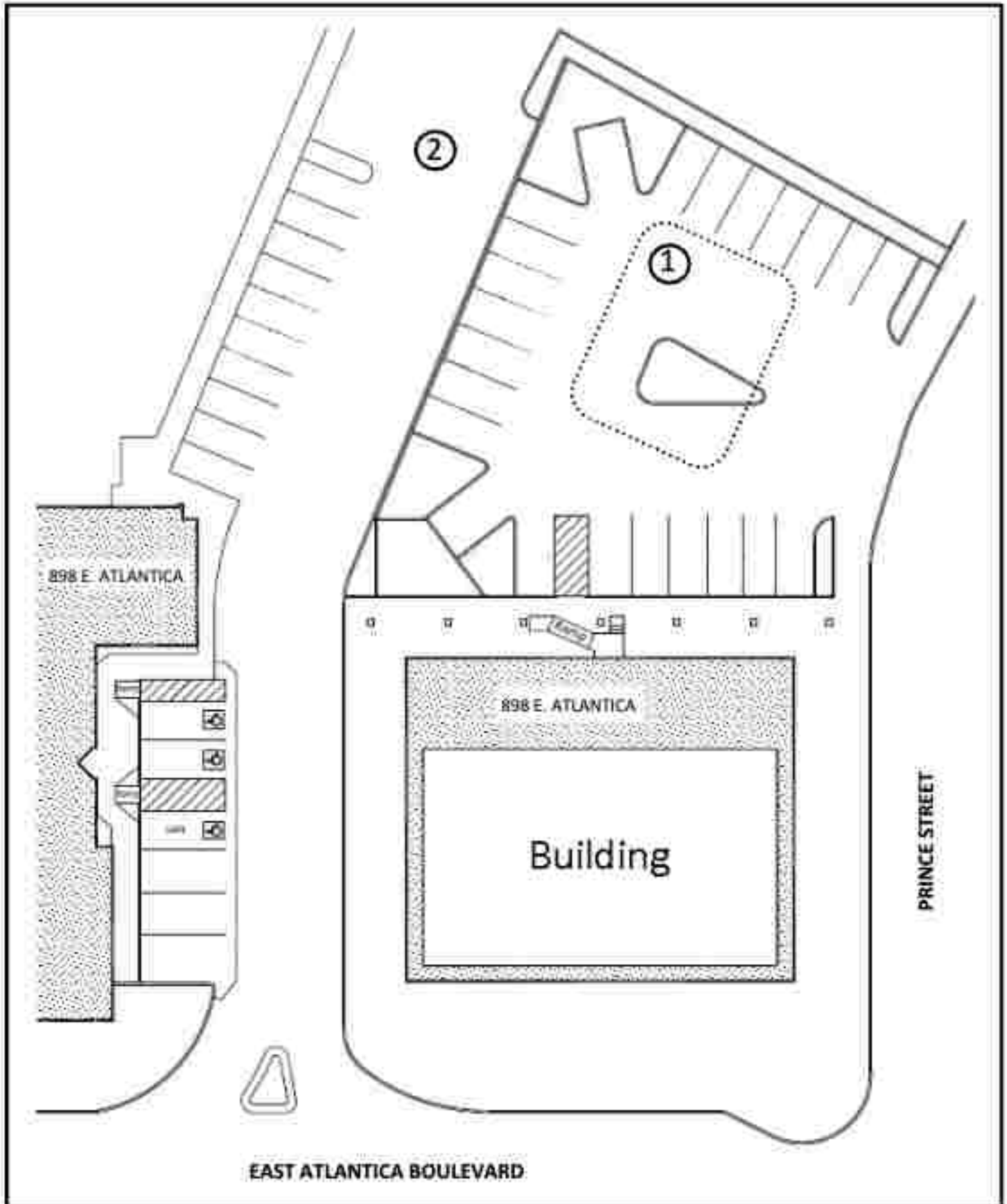
PARCEL ID: 07-13-198-009

LEGAL DESCRIPTION:

SECTION 44-7-31 COMMENCING ON THE SOUTH LINE OF EAST ATLANTICA BOULEVARD AT A POINT 60 FT EAST OF THE N&S 1/4 LINE OF SECTION 44; THENCE SOUTHERLY 145 FT PARALLEL WITH SAID 1/4 LINE; THENCE WEST 50 FT PARALLEL WITH THE SOUTH LINE OF EAST ATLANTICA BOULEVARD TO THE N&S LINE OF SECTION 44; THENCE SOUTH 266.37 FT MORE OR LESS ALONG SAID 1/4 LINE TO A POINT 789.75 FT NORTH OF THE SOUTH LINE OF SECTION 44; THENCE WEST PARALLEL WITH THE SOUTH LINE OF SECTION 44 TO A POINT 129.55 FT EAST OF THE EAST LINE OF SOUTH PRINCE STREET; THENCE NORTHERLY 352 FT MORE OR LESS TO THE SOUTH LINE OF EAST ATLANTICA BOULEVARD; THENCE EAST 138.5 FT MORE OR LESS ALONG THE SOUTH LINE OF EAST ATLANTICA BOULEVARD TO THE POINT OF BEGINNING.

EXAMPLE AGREEMENT EXHIBIT

EXHIBIT B



EXAMPLE AGREEMENT EXHIBIT

EXHIBIT C

MANUFACTURED TREATMENT DEVICES

1. Stormtech MC-3500 System
2. Baysaver Barracuda S6 Unit

BOTH LOCATED AS SHOWN ON EXHIBIT B

Section 8: Attachment H

Stormwater Treatment Inspection Forms



Annual Inspection Report

Vertical Flow-Thru Stormwater Treatment Unit (Filter Insert)

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____ Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Manufacturer & Model of Treatment Unit(s) Installed: _____

Number of Treatment Units Installed / Inspected: _____

Observed Condition of Treatment Unit(s)

Leaves and/or other debris in sediment chamber and / or filter media

Leaves, debris and sediment in and around treatment unit is restricting stormwater flow into and through unit

Sediment

Less than 1 inch of sediment in sediment chamber:

Several inches of sediment in sediment chamber:

More than 5 inches of sediment in sediment chamber:

Filter Media

Filter media fairly clean, only requiring surface cleaning

Filter media is dark and covered with a sediment layer

Filter media is completely plugged with sediment and/or debris

The unit must be maintained on a regular schedule to prevent saturation of the filter media by contaminants and blockage from sedimentation and debris buildup. Maintenance can be accomplished by removing cover, vacuuming debris and sediment from the sediment chamber with a wet/dry vacuum and replacing the filter media if necessary. A typical recommended change-out of the filter media would be every 4 to 6 months. Sedimentation maintenance may be needed more often depending on the location and season. A clean-out after heavy leaf fall is recommended.

Maintenance / Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Sediment & debris need to be removed and filter media cleaned

Sediment & debris need to be removed and filter media replaced

Unit is not functioning properly and needs to be repaired

Item(s) needing repair: _____

Maintenance / Repair Performed on Treatment Unit(s)

Sediment chamber has been cleaned

Filter media has been cleaned

Filter media has been replaced

Necessary repairs have been made

Necessary repairs have not been made

but, are scheduled to be completed

Comments: _____

Please Email this report to: Environmental Support Specialist, druxts@kalamazoocty.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Note: Please contact the manufacturer or supplier of your stormwater treatment unit for detailed instructions on maintenance of your particular unit.



Annual Inspection Report

Horizontal Flow In-Line Stormwater Treatment Unit

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: 9

Inspector's Name: 9

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Manufacturer & Model of Treatment Unit(s) Installed: _____

Number of Treatment Units Installed / Inspected: _____

Observed Condition of Treatment Unit(s)

The depth of oil and sediment in the unit can be measured from the ground surface.

Sediment

Less than 1 inch of sediment on bottom

1 to 7 inches of sediment on bottom

More than 7 inches of sediment on bottom

Oil

No oil on water surface

Oil sheen on water surface

More than 1/8 inch of oil on water surface

Generally, annual maintenance is recommended but the required maintenance frequency will vary with the amount of pollution on your site (number of hydrocarbon spills, amount of sediment, etc.). It is recommended that the frequency of maintenance be increased or reduced based on local conditions. Maintenance should be performed immediately after an oil spill or once the sediment depth reaches the values specified in your unit manufacturer's maintenance specifications. Maintenance of these units is performed from the surface via vacuum truck. These units must be maintained to ensure long-term environmental protection through continual performance.

Maintenance / Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Vacuuming of pits and/or sediment needed

Unit is **not** functioning properly and needs to be repaired

Item(s) needing repair: _____

Maintenance / Repair Performed on Treatment Unit(s)

Oil and/or sediment has been vacuumed out of unit

Necessary repairs have been made

Necessary Repairs have not been made but are scheduled to be completed

Comments: _____

Please Email this report to: Environmental Support Specialist, drusts@kalamazocounty.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the manufacturer or supplier of your stormwater treatment unit for detailed instructions on maintenance of your particular model.



Annual Inspection Report

Stormwater Basin Treatment Unit or General BMP

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Stormwater BMP Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Stormwater BMP type installed: _____

Number of Stormwater BMPs inspected: _____

Observed Condition of Stormwater BMP

Scouring, erosion or loss of vegetation

Mosquito breeding

present Debris or trash present

Algae bloom

Excessive vegetation

Sediment accumulation in the basin

Generally, annual maintenance is recommended but the required maintenance frequency will vary with the amount of pollution on your site (number of hydrocarbon spills, amount of sediment, etc.). It is recommended that the frequency of maintenance be increased or reduced based on local conditions. Maintenance should be performed immediately after an environmental spill. Stormwater BMP(s) must be maintained to ensure long-term environmental protection through continual performance.

Maintenance/Repair Needed on Stormwater BMP(s)

No repair or maintenance needed at this time

BMP Structure is **not** functioning properly and needs to be repaired. Item(s) needing repair: _____

Maintenance/Repair Performed on Stormwater BMP(s)

Necessary Repairs have not been made but are scheduled to be completed

Necessary repairs have been made

Comments: _____

Please Email this report to: Environmental Support Specialist, drusts@kalamazocounty.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the installer of your stormwater BMP(s) for specific maintenance requirements



Annual Inspection Report

Bioretention Basin (Rain Garden) Stormwater Treatment Unit

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Approximate Square Footage of Treatment Unit(s) installed: _____

Number of Treatment Units installed/inspected: _____

Observed Condition of Treatment Unit(s)

Leaves and/or other debris accumulated on surface of unit

Leaves, debris and sediment in and around treatment unit is restricting stormwater flow into and through unit

Erosion Control

Unit has at least 2 inches of mulch depth

Unit has < 2 inches of mulch depth

Unit has exposed soil and/or signs of soil washout

Vegetation

Healthy, diverse vegetation covering >85% of unit

Vegetation is overgrown or showing signs of stress

Vegetation is sparse with areas of exposed mulch or soil

The unit must be maintained on a regular schedule to prevent blockage from sedimentation and debris buildup, prevent mulch and soil erosion, and maintain healthy vegetative cover. Maintenance can be accomplished by watering, removing debris and excess vegetative growth, re-applying mulch, and adding new plants if needed. Watering and mulch application maintenance may be needed more often depending on the location and season. Monitoring for poor drainage (continued ponding six days after heavy rainfall) is recommended.

Maintenance/Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Vegetation requires pruning or additional plantings added

Sediment & debris need to be removed

Unit is **not** functioning properly and needs to be repaired

Mulch needs to be re-applied

Item(s) needing repair: _____

Maintenance/Repair Performed on Treatment Unit(s)

Sediment and debris have been removed

Necessary repairs have been made

Mulch has been re-applied

Necessary repairs have not been done

Vegetation health has been improved

but are scheduled to be completed

Comments: _____


Please Email this report to: Environmental Support Specialist, etrusta@kalamazooecity.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the installer of your stormwater BMP(s) for specific maintenance requirements

Section 9: Attachment A

Updates to Stormwater Asset Inventory, Mapping and
Record Retention

 City of Kalapa Public Services Department	Work Practice WP Number:
	Computer Path: cityfp06 EnvServices Stormwater Stormwater Assets Management Plan Asset Updates
Title: Updates to Stormwater Asset Inventory, Mapping and Record Retention	Written by: Jessica Enahwo Date: 12/15/2021
	Reviewed by: Elise MacArthur Date: 2/22/2022
	Approved by: Elise MacArthur Date: 2/22/2022

WP Revision History		
Revision	Date	Approval

- i. **PURPOSE AND SCOPE:** This work practice has been established to centralize and standardize the practice of collecting and updating information related to the City's MS4, including but not limited to: as-builts, undocumented modifications, GPS data, engineer-approved designs/ drawings, condition and risk analyses, pictures and other related information. Because this information is generated by several City departments and divisions, this work practice provides a process to consolidate the City's Department of Public Services, Stormwater Asset Data Inventory, Mapping and Record Retention programs.
- ii. **REQUIREMENTS:** Ensure all information described in Item i. pertaining to the City's Stormwater Asset Data is collected and updated regularly and made available for internal use via the GIS database, MS4 maps, Lucity Inventory, and official records.
- iii. **Definitions**
 - a. GIS – Geographic Information Systems
 - b. GPS – Global Positioning System
 - c. Lucity – Asset Management Software
 - d. BMP – Stormwater Best Management Practice

- e. NPDES MS4 Permit – National Pollutant Discharge Elimination System Permit for Separate Storm Sewer Systems as approved by the Michigan Department of Environment, Great Lakes and Energy.
- f. Stormwater Sewer System – This includes municipal stormwater sewer assets for collecting, distributing, retaining, treating, and discharging stormwater within the City's NPDES MS4 Permit boundaries. These assets include stormwater related piping, manholes, inlets, catch basins; outfalls, manufactured treatment devices, retention and detention basins, oil- water separators, rain gardens, swales, bioswales and other stormwater BMPs.
- g. MS4 – Municipal Separate Storm Sewer System (i.e. Stormwater Sewer System)

IV. RESPONSIBILITIES:

- a. City staff from all involved departments and divisions working on, modifying and/or inspecting the City's MS4 shall provide to the City's Department of Public Services (DPS) Environmental Programs Manager all new as-built drawings, collected data on undocumented infrastructure, and documentation regarding modifications and/or inspection results related to the City's MS4. This information shall be collected from private developers, private contractors, and City project managers, project supervisors, field technicians and crew members.
- b. The City's Engineers and Field Supervisors shall provide an electronic copy of new or updated as-built drawings and other related information to the City's Environmental Programs Manager within three months of project completion. As-built drawings, etc. shall be submitted via email as an MS4 change request and copied to cityfp06\EnvServices\Stormwater\Stormwater Assets & Management Plan\Asset Updates folder
- c. As the central communicator in this work practice, the City's Environmental Programs Manager shall submit as-built drawings and other MS4 change requests to the City's Records and Asset Managers for processing at a frequency not to exceed 90 days (quarterly). The Environmental Programs Manager shall routinely communicate with all departments and divisions which may generate this information to ensure the work practice is maintained.
- d. The City's Records and Assets Manager shall review submitted documents, assign or modify asset tags/names, and authorize the City's Senior System's Analyst and DPS Lead Drafter to implement the requested change(s).
- e. The City's Senior Systems Analyst shall implement information and change requests to the Lucity program, GIS database and associated MS4 maps.
- f. The City's DPS Lead Drafter shall update the City's MS4 maps.

V. PROCEDURE:

- a. Quarterly gather all new as-built information and MS4 change requests in cityfp06\EnvServices\Stormwater\Stormwater Assets & Management Plan\Asset Updates folder

- b. Quarterly the City's Records and Assets Manager shall review submitted documents, assign or modify asset tags/names, and authorize the City's DPS GIS Specialist and DPS Lead Drafter to implement the requested change(s).
 - i. Changes made by the GIS are sent to the City's Records and Asset Manager for Approval
 - ii. If Approved, the City's Records and Asset Manager sends changes to the Senior Systems Analyst for implementation to the Public Services GIS database
- c. Quarterly the Senior Systems Analyst (GIS) will add the new information to the GIS database and stormwater map layer(s)
- d. Quarterly the Senior Systems Analyst (Lucity) will implement changes to Lucity program.
- e. Quarterly the Lead Drafter will implement changes to the MS4 maps.

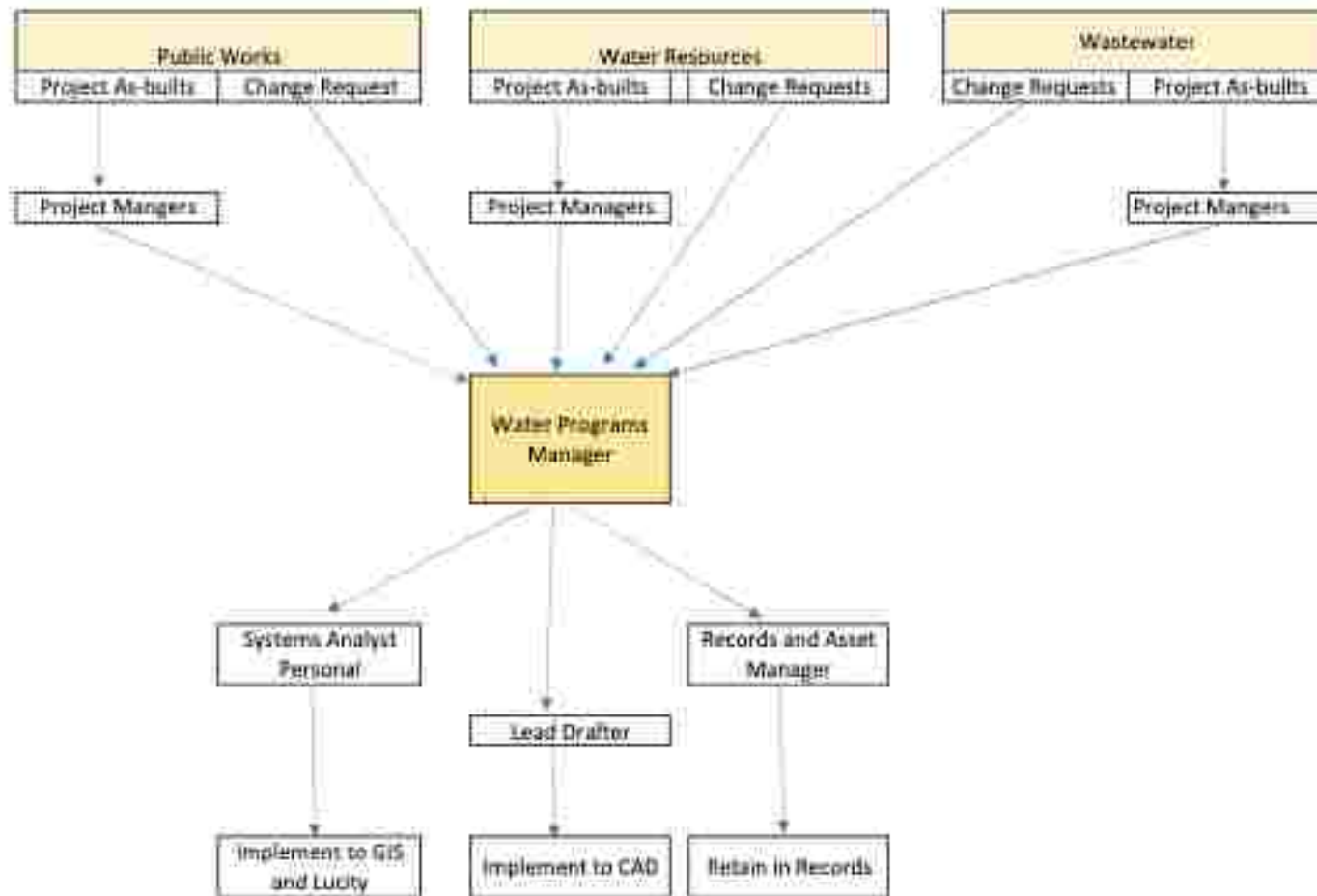
VI. REFERENCES:

- a. K:\EnvServices\Stormwater\Stormwater Assets & Management Plan\Asset Updates

VII. ATTACHMENTS:

- a. Flow Chart
- b. Change Request Form
- c. Change Request Example

FLOW CHART - STORMWATER ASSET INVENTORY & MAPPING WORK PRACTICE



*Each department tracks the as-built drawings and change requests for stormwater asset in need of updates to the asset inventory and mapping

*As-built drawings and change requests are sent to the Environmental Programs Manager

*Quarterly: As-builts and Change Requests are sent to Records and to Systems Analyst Personal for GIS and Lucity implementation

STORMWATER ASSET & MAPPING CHANGE REQUEST

Modify Asset(s):

Structure ID or Pipe Location and Length (for pipe, provide upstream and downstream structure IDs)	Describe the Modification to the Asset and Reason for the modification (e.g., CIP lined 300 feet of 12" VCP due to poor pipe condition; Replaced CB with 2 ft diameter CB w/ 2 ft deep sump due to no sump in previous CB; Changed casing from solid to grated [structure is now an inlet] due to drainage issues, etc.)

Delete Asset(s):

Structure ID or Pipe Location and Length (for pipe, provide upstream and downstream structure IDs)	Describe Why the Asset was Removed (e.g., To facilitate water main permitting and construction; Structure no longer needed due to road being vacated, etc.)

Add Asset(s):

Type of Asset (CB, MH, MTD, Pipe, etc.)	Describe (location, size, material(s), invert elevation(s), purpose, etc.)

Field Sketch (attach as-built drawings if available)



EXAMPLE

STORMWATER ASSET & MAPPING CHANGE REQUEST

Modify Asset(s):

Structure ID or Pipe Location and Length (for pipe, provide upstream and downstream structure IDs)	Describe the Modification to the Asset and Reason for the modification (e.g., CIPP lined 300 feet of 12" VCP due to poor pipe condition; Replaced CB with 2 ft diameter CB w/ 2 ft deep sump due to no sump in previous CB; Changed casing from solid to grated [structure is now an inlet] due to drainage issues, etc.)
Example: STMHKC15887 to STMHKC15883	Example: CIPP lined ~333 feet of VCP from Church to Eleonor due to poor condition

Delete Asset(s):

Structure ID or Pipe Location and Length (for pipe, provide upstream and downstream structure IDs)	Describe Why the Asset was Removed (e.g., To facilitate water main permitting and construction; Structure no longer needed due to road being vacated, etc.)

Add Asset(s):

Type of Asset (CB, MH, MTD, Pipe, etc.)	Describe (location, size, material(s), invert elevation(s), purpose, etc.)

Field Sketch (attach as-built drawings if available)



Section 9: Attachment B

Materials Report Run Date: 1/24/17

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Report Name : Material Report		
Run Date : 1/24/2017		
Material Name	Manufacturer Name	Chemical Areas
#2 Diesel	Lakeside Refining Company	Stockbridge Oil Room
(Methylenedinitro)-Tetraazetic Acid Disodium Salt	Avantor Performance Materials, Inc.	Environmental Services Lab
(Ethylenedinitro)-Tetraazetic Acid Disodium Salt	Avantor Performance Materials, Inc.	Harrison Lab
2-Propanol	Fisher Scientific Chemical Division	Environmental Services Lab
2-Propanol	Fisher Scientific Chemical Division	Harrison Lab
3M Body Shop Clean-Up Car Wash Soap	3M Automotive Aftermarket Division	Stockbridge Storage Room 2
35174 Battery Cleaner & Acid Detector	KAR Products	Stockbridge Oil Room
Accu-Tab Si Calcium Hypochlorite Tablets	Rxall, LLC	Pump Stations
Acetic Acid 50% (v/v) Aqueous Solution	Ricca Chemical Company	Environmental Services Lab
Acetic Acid 50% (v/v) Aqueous Solution	Ricca Chemical Company	Harrison Lab
Acetic Acid, Glacial	Fisher Scientific	Harrison Lab
Acetic Acid, Glacial	Fisher Scientific	Trace Organics Lab
Acetone	Fisher Scientific Chemical Division	Environmental Services Lab
Acetone	Fisher Scientific Chemical Division	Harrison Lab
Aervoe Stake Dip - Bulk	Aervoe Industries Incorporated	Stockbridge Storage Room 1
Aervoe Stake Dip - Bulk	Aervoe Industries Incorporated	Storage Room
Aervoe Survey Marking Paint 207 White; Aervoe Survey Marking Paint 224 Flo Green; Aervoe Survey Marking Paint 228 Flo Pink	Aervoe Industries Incorporated	Stockbridge Storage Room 1
Aervoe Survey Marking Paint 207 White; Aervoe Survey Marking Paint 224 Flo Green; Aervoe Survey Marking Paint 229 Flo Pink	Aervoe Industries Incorporated	Storage Room
AF-1133	Acchem, Inc.	Stockbridge Oil Room
AF-3430	Acchem, Inc.	Stockbridge Oil Room
Ag/AgCl Reference Electrode Filling Solution	Thermo Electron Corporation	Environmental Services Lab
Ag/AgCl Reference Electrode Filling Solution	Thermo Electron Corporation	Harrison Lab
Air Brake Anti-Freeze	Halco Brake Systems	Stockbridge Field Supervisors Area
Air Tool Lubricant	Blaster Corporation	Stockbridge Storage Room 2
All Seasons Select Lubricant	Ingersoll-Rand - (ICI)	Stockbridge Storage Room 2
Ammonia Cyanurate Reagent	Hach Company	Pump Stations
Ammonia Electrode Filling Solution	Thermo Fisher Scientific	Environmental Services Lab
Ammonia Electrode Filling Solution	Thermo Fisher Scientific	Harrison Lab
Ammonia Salicylate Reagent	Hach Company	Pump Stations
Ammonium Chloride	Fisher Scientific Chemical Division	Environmental Services Lab
Ammonium Chloride	Fisher Scientific Chemical Division	Harrison Lab
Ammonium Hydroxide	Fisher Scientific	Harrison Lab
Ammonium Hydroxide	Fisher Scientific	Trace Organics Lab
Ammonium Hydroxide, Trace Metal Grade	Fisher Scientific	Environmental Services Lab
Ammonium Hydroxide, Trace Metal Grade	Fisher Scientific	Harrison Lab
Ammonium Molybdate	Ricca Chemical Company	Environmental Services Lab
Ammonium Molybdate	Ricca Chemical Company	Harrison Lab
Ammonium Molybdate Tetrahydrate	Fisher Scientific Chemical Division	Environmental Services Lab
Ammonium Molybdate Tetrahydrate	Fisher Scientific Chemical Division	Harrison Lab
Ammonium Persulfate 98+%	Fisher Scientific	Environmental Services Lab
Ammonium Persulfate 98+%	Fisher Scientific	Harrison Lab
Antimony Potassium Tartrate Trihydrate	Fisher Scientific Chemical Division	Environmental Services Lab
Antimony Potassium Tartrate Trihydrate	Fisher Scientific Chemical Division	Harrison Lab
Arrest Rust Remover/Surface Prep	Corrosated Products	Stockbridge Field Supervisors Area
Beaver Sea Coll	Beaver Research Company	Harrison Stockroom
Beaver Sea Coll	Beaver Research Company	Stockroom Harrison
Beaver Belt Buster	Beaver Research Company	Stockbridge Storage Room 1

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Beaver Klean Vu Glass Cleaner	Beaver Research Company	Stockbridge Storage Room 1
Beaver Klean Vu Glass Cleaner	Beaver Research Company	Stockbridge Storage Room 2
Beaver Master Lube N/C Eco 4 Way Penetrating Lubricant	Beaver Research Company	Harrison Stockroom
Beaver Master Lube N/C Eco 4 Way Penetrating Lubricant	Beaver Research Company	Stockbridge Storage Room 1
Beaver Master Lube N/C Eco 4 Way Penetrating Lubricant	Beaver Research Company	Stockroom Harrison
Beaver Soy Lease DW	Beaver Research Company	Stockbridge Field Supervisors Area
Beaver Sport Air Tool Cleaner & Lubricant	Beaver Research Company	Harrison Stockroom
Beaver Sport Air Tool Cleaner & Lubricant	Beaver Research Company	Stockroom Harrison
Bee Bopper II Wasp & Hornet Spray	ABI (ISA)	Harrison Stockroom
Bee Bopper II Wasp & Hornet Spray	ABI (ISA)	Stockroom Harrison
Bet Co Deep Blue Glass and Surface Cleaner 10804-00	Betco Corporation	Harrison Stockroom
Bet Co Deep Blue Glass and Surface Cleaner 10804-00	Betco Corporation	Stockroom Harrison
Betco AF215 Disinfectant 315	Betco Corporation LTD	Harrison Stockroom
Betco AF215 Disinfectant 315	Betco Corporation LTD	Stockroom Harrison
Betco Citrusfoam Organic All Purpose Cleaner 068	Betco Corporation	Harrison Stockroom
Betco Citrusfoam Organic All Purpose Cleaner 066	Betco Corporation	Stockroom Harrison
Betco Push Drain Maintainer 133, Drain Maintainer, Floor Cleaner, Spotter	Betco Corporation LTD	Harrison Stockroom
Betco Push Drain Maintainer 133, Drain Maintainer, Floor Cleaner, Spotter	Betco Corporation LTD	Stockroom Harrison
Betco Rest Stop Virucidal ready-to-use Germicide Cleaner Disinfectant Deodorant Product #: 126361	Betco Corporation	Harrison Stockroom
Betco Rest Stop Virucidal ready-to-use Germicide Cleaner Disinfectant Deodorant Product #: 126361	Betco Corporation	Stockroom Harrison
Betco Sure Bet II Bathroom Cleaner 314	Betco Corporation LTD	Harrison Stockroom
Betco Sure Bet II Bathroom Cleaner 314	Betco Corporation LTD	Stockroom Harrison
Bismark Brown Y	Alfa Aesar Thermo Fisher Scientific Chemicals, Inc	BioAssay Lab
Bismark Brown Y	Alfa Aesar Thermo Fisher Scientific Chemicals, Inc	Harrison Lab
Bleach - Sodium Hypochlorite - NSF	Haviland Products Company	Building 20A
Bleach - Sodium Hypochlorite - NSF	Haviland Products Company	Harrison
Bleach - Sodium Hypochlorite - NSF	Haviland Products Company	Pump Stations
Brj-35	Fisher Scientific	Environmental Services Lab
Brj-35	Fisher Scientific	Harrison Lab
Brj-35 (21% Solution)	CI Analytical	Environmental Services Lab
Brj-35 (21% Solution)	CI Analytical	Harrison Lab
Bromothymol Blue Indicator, 0.04% (w/v)	Ricca Chemical Company LLC	Harrison Lab
Bromothymol Blue Indicator, 0.04% (w/v)	Ricca Chemical Company LLC	Trace Organics Lab
Buffer Solution Hardness 1 pH 10.1 ± 0.1	Hach Company	Environmental Services Lab
Buffer Solution Hardness 1 pH 10.1 ± 0.1	Hach Company	Harrison Lab
Bugs & Gone	Sea Foam Sales Company	Stockbridge Storage Room 2
Bux Dri Slide	Cortec Corporation	Stockbridge Storage Room 2
Calcium Chloride	Fisher Scientific	Environmental Services Lab
Calcium Chloride	Fisher Scientific	Harrison Lab
Calcium Hypochlorite, Powder	Avantor Performance Materials, Inc.	Environmental Services Lab
Calcium Hypochlorite, Powder	Avantor Performance Materials, Inc.	Harrison Lab
ChemStation Heavy Duty Cleaner	One Way Products	Stockbridge Storage Room 1&2
ChemStation Vehicle Wash & Wax	One Way Products	Building 21
ChemStation Vehicle Wash & Wax	One Way Products	Harrison

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Chloroform	Fisher Scientific	Environmental Services Lab
Chloroform	Fisher Scientific	Harrison Lab
Citgo Gasolines, All Grades Unleaded	Citgo Petroleum Corporation (TX)	Harrison & Stockbridge - Underground Fuel Tanks
Citgo No. 2 Diesel Fuel, Low Sulfur, All Grades	Citgo Petroleum Corporation (TX)	Harrison & Stockbridge - Underground Fuel Tanks
Clarion® Green A/W Oil 32	Citgo Petroleum Corporation (TX)	Building 11A
Clarion® Green A/W Oil 32	Citgo Petroleum Corporation (TX)	Harrison
Clini-Clean Phosphate-Free Formula	Northwest Lab Services, Inc.	Stockbridge Oil Room
Colihose Pneumatics ATL 128 Air Tool Lubricant	Colihose Pneumatics/Arco Automotive	Stockbridge Storage Room 2
Contact Cleaner 2000® Precision Cleaner	CRC Industries, Inc.	Harrison Stockroom
Contact Cleaner 2000® Precision Cleaner	CRC Industries, Inc.	Stockroom Harrison
Ecol Cutting Fluid (1200/8)	Beaver Research Company	Harrison Stockroom
Ecol Cutting Fluid (1200/8)	Beaver Research Company	Stockroom Harrison
CRC Diesel Air Brake Anti-Freeze & Conditioner	CRC Industries, Inc.	Stockbridge Storage Room 2
CRC Freeze-Off Super Penetrant	CRC Industries, Inc.	Stockbridge Storage Room 2
CRC Mass Air Flow Sensor Cleaner	CRC Industries, Inc.	Stockbridge Storage Room 2
CRC White Lithium Grease	CRC Industries, Inc.	Stockbridge Storage Room 2
Crystal Violet	Fisher Scientific	BioAssay Lab
Crystal Violet	Fisher Scientific	Harrison Lab
Cupric Sulfate Pentahydrate	Fisher Scientific Chemical Division	Environmental Services Lab
Cupric Sulfate Pentahydrate	Fisher Scientific Chemical Division	Harrison Lab
Cyanide Standard, 1000 ppm CN-	Ricca Chemical Company LLC	Environmental Services Lab
Cyanide Standard, 1000 ppm CN-	Ricca Chemical Company LLC	Harrison Lab
D Gel Emergency Fuel Treatment	E-ZOL Products, Inc.	Stockbridge Storage Room 2
Daybreak	Certified Labs, Div. of NCH Corp.	Stockbridge Oil Room
De-Ice 55 (Liq. Ice & Snow Melter)	Correlated Products	Stockbridge Field Supervisors Area
Dex Cool	Ashland	Stockbridge Oil Room
Digestion Solution for COD	Hach Company	Environmental Services Lab
Digestion Solution for COD	Hach Company	Harrison Lab
Disinfectant Cleaner Pine Oil	One Way Products	Pump Stations
Double Junction Outer Filling Solution	Thermo Fisher Scientific Water and Lab Products	Environmental Services Lab
Double Junction Outer Filling Solution	Thermo Fisher Scientific Water and Lab Products	Harrison Lab
DPD Total Chlorine Reagent Powder Pillows	Hach Company	Harrison Lab
DPD Total Chlorine Reagent Powder Pillows	Hach Company	Trace Organics Lab
Drierite Desiccant - Anhydrous	W.A. Hammond Drierite Co., Ltd.	Environmental Services Lab
Drierite Desiccant - Anhydrous	W.A. Hammond Drierite Co., Ltd.	Harrison Lab
DTL Oil Heavy Medium Lubricating Oil ISO VG 68	Exxon Mobil Corporation	Building 21
DTE Oil Heavy Medium Lubricating Oil ISO VG 68	Exxon Mobil Corporation	Harrison
Dye Sol or Car-O-Sol	Med-Tek Corporation	Stockbridge Oil Room
Eco-Kleen Waterless Hand Cleaner with Pumice	Lad Chemicals, Inc.	Stockbridge Oil Room
Equalizer Ultra High Solids Floor Finish #549	Hilyard Industries	Harrison Stockroom
Equalizer Ultra High Solids Floor Finish #549	Hilyard Industries	Stockroom Harrison
Ethylenediaminetetraacetic Acid, Disodium Salt Dihydrate	Fisher Scientific Chemical Division	Environmental Services Lab
Ethylenediaminetetraacetic Acid, Disodium Salt Dihydrate	Fisher Scientific Chemical Division	Harrison Lab
Esmark Premium Hydro Oil	Esmark Manufacturing Co., Inc.	Stockbridge Storage Room 2
Fabulous II Taster PB Powerful Penetrating Catalyst	Walter Corporation	Harrison Stockroom

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Tabulous Blaster PB Powerful Penetrating Catalyst	Blaster Corporation	Stockroom Harrison
Ferric Chloride	Fisher Scientific	Environmental Services Lab
Ferric Chloride	Fisher Scientific	Harrison Lab
Ferric Chloride Solution DWG Grade	PVS Technologies, Inc. (MI)	
Ferro/Var Iron Reagent	Hach Company	Pump Stations
Food Grade Penetrating Oil	CRC Industries, Inc.	Harrison Stockroom
Food Grade Penetrating Oil	CRC Industries, Inc.	Stockroom Harrison
Formula 271 Se-lect	State Chemical Manufacturing Company	Pump Stations
Fuel Injector Cleaner	Berkebile Oil Company, Inc	Stockbridge Field Supervisors Area
Gasoline Fuel System Cleaner	MotorVac Technologies, Inc.	Stockbridge Field Supervisors Area
Glucose-Glutamic Acid	LabChem Inc.	Environmental Services Lab
Glucose-Glutamic Acid	LabChem Inc.	Harrison Lab
Grease Buster	Total Solutions	Stockbridge Field Supervisors Area
Hand Cleaner Deluxe Lotion	One Way Products	Pump Stations
Hexafloc 148LM	Hexagon Chemical Company	Stockbridge Oil Room
Hexafloc 5B-618X	Hexagon Chemical Company	Stockbridge Oil Room
Hillyard Arsenal Restroom Cleaner	Hillyard Industries	Harrison Stockroom
Hillyard Arsenal Restroom Cleaner	Hillyard Industries	Stockroom Harrison
Hillyard Clean Assist Take Down Cherry #466	Hillyard Industries	Harrison Stockroom
Hillyard Clean Assist Take Down Cherry #466	Hillyard Industries	Stockroom Harrison
Hillyard Extra Strength CSP Cleaner	Hillyard Industries	Harrison Stockroom
Hillyard Extra Strength CSP Cleaner	Hillyard Industries	Stockroom Harrison
Hillyard Pine-O-Glide II Fine Odor Disinfectant Cleaner Deodorant	Hillyard Industries	Harrison Stockroom
Hillyard Pine-O-Glide II Fine Odor Disinfectant Cleaner Deodorant	Hillyard Industries	Stockroom Harrison
Hillyard Quick & Clean Hi-Glo #1015	Hillyard Industries	Harrison Stockroom
Hillyard Quick & Clean Hi-Glo #1015	Hillyard Industries	Stockroom Harrison
Hillyard Quick & Clean Oil Stainless Steel Cleaner	Hillyard Industries	Harrison Stockroom
Hillyard Quick & Clean Oil Stainless Steel Cleaner	Hillyard Industries	Stockroom Harrison
Hillyard Super Hi-Aire Fresh & Clean	Hillyard Industries	Harrison Stockroom
Hillyard Super Hi-Aire Fresh & Clean	Hillyard Industries	Stockroom Harrison
Hillyard Windex Clean +	Hillyard Industries	Harrison Stockroom
Hillyard Windex Clean +	Hillyard Industries	Stockroom Harrison
Hydrochloric acid	Fisher Scientific Chemical Division	Environmental Services Lab
Hydrochloric acid	Fisher Scientific Chemical Division	Harrison Lab
Hydrofluosilicic Acid	Alexander Chemical Corporation	Pump Stations
Hypophosphorous Acid, 50%	Fisher Scientific	Harrison Lab
Hypophosphorous Acid, 50%	Fisher Scientific	Trace Organics Lab
Imidazole, 99%	Fisher Scientific	Environmental Services Lab
Imidazole, 99%	Fisher Scientific	Harrison Lab
Industrial AW46 Hydraulic Oil	Pinnacle Oil Holdings, LLC	Building 11D
Industrial AW46 Hydraulic Oil	Pinnacle Oil Holdings, LLC	Harrison
Industrial AW46 Hydraulic Oil	Pinnacle Oil Holdings, LLC	Stockbridge Oil Room
Instant Patch Tape	Kool Seal, Inc.	Pump Stations
Intercool P-300	Interstate Chemical Co. (PA)	Admin Building
Intercool P-300	Interstate Chemical Co. (PA)	Harrison
Isododecane Fuel No-CFCs	Solder-IT, Inc.	Stockbridge Storage Room 2
Isopent Premium Fuel Line Antifreeze & Water Remover	Gold Eagle Company	Stockbridge Storage Room 2
Kendall Fleet Supreme EC 14E 15W-40	Phillips 66 Lubricants	Stockbridge Oil Room
Kyle Up Shot Overhead Beam Sealer, Interior Oil Base	MasterChem Industries, Inc.	Harrison Stockroom

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Rite Up Shot Overhead Stain Sealer, Interior Oil Base	MasterChem Industries, Inc.	Stockroom Harmon
Kimball Midwest Ultra Pro Max Aerosol Paint	Kimball Midwest	Stockbridge Storage Room 2
Kleen Lube II	Lad Chemicals, Inc.	Pump Stations
Kop-Flex Standard Coupling Grease K55	Regal-Beloit	Harrison Stockroom
Kop-Flex Standard Coupling Grease K55	Regal-Beloit	Stockroom Harmon
K55 Kabonox Spot & Stain Remover	Betco Corporation	Harrison Stockroom
K55 Kabonox Spot & Stain Remover	Betco Corporation	Stockroom Harmon
K55 Liquid Crime Cleanser Mild Abrasive	K55 Enterprises	Harrison Stockroom
K55 Liquid Crime Cleanser Mild Abrasive	K55 Enterprises	Stockroom Harmon
K55 Strong Heavy Duty Bowl Cleaner Broad Spectrum (Hospital Use) Disinfectant	K55 Enterprises	Harmon Stockroom
K55 Strong Heavy Duty Bowl Cleaner Broad Spectrum (Hospital Use) Disinfectant	K55 Enterprises	Stockroom Harmon
LA-CO Silc-01 Heavy Duty Thread Sealing Compound	LA-CO Industries, Inc./Markal Co.	Harrison Stockroom
LA-CO Silc-01 Heavy Duty Thread Sealing Compound	LA-CO Industries, Inc./Markal Co.	Stockroom Harmon
L-Ascorbic Acid	Fisher Scientific Chemical Division	Environmental Services Lab
L-Ascorbic Acid	Fisher Scientific Chemical Division	Harrison Lab
Lead in HNO3 1000ug/ml, 10.000ug/ml	Plasma Chem Corp	Stockbridge Oil Room
L-Glutamic Acid	Fisher Scientific Chemical Division	Environmental Services Lab
L-Glutamic Acid	Fisher Scientific Chemical Division	Harrison Lab
Liquid Powder Tracing Dye	NorLab	Harrison Lab
Liquid Powder Tracing Dye	NorLab	Inf. Services Lab
Low Viscosity Hy-Gard Transmissions and Hydraulic Oil	Phillips 66 Lubricants	Stockbridge Storage Room 2
Lubriplate	Lubriplate Lubricants Co.	Harrison Stockroom
Lubriplate	Lubriplate Lubricants Co.	Stockroom Harmon
Lustre Premium Furniture Polish	One Way Products	Pump Stations
Mac's 1072 Battery Terminal Cleaner	Automotive Redistribution Center c/o Balkamp, Inc	Stockbridge Storage Room 2
Mac's 4810 Brake Parts Cleaner, Low VOC Formula	Niteo Products, LLC	Harrison Stockroom
Mac's 4810 Brake Parts Cleaner, Low VOC Formula	Niteo Products, LLC	Stockroom Harmon
Mac's 2216 Premium Starting Fluid	Niteo Products, LLC	Harrison Stockroom
Mac's 2216 Premium Starting Fluid	Niteo Products, LLC	Stockroom Harmon
Mac's 8700 Carb, Choke & Throttle Body Cleaner	Niteo Products, LLC	Stockbridge Storage Room 2
Mac's Premium Performance Multi-Purpose Wheel Bearing and Chassis Grease	Valvoline LLC	Stockbridge Storage Room 1
Magnesium Chloride	Fisher Scientific	Environmental Services Lab
Magnesium Chloride	Fisher Scientific	Harrison Lab
Magnesium Sulfate Heptahydrate	Fisher Scientific	Environmental Services Lab
Magnesium Sulfate Heptahydrate	Fisher Scientific	Harrison Lab
Magnifloc® 490C Flocculant	American Cyanamid Company - (Clerax Company)	Stockbridge Oil Room
Magnifloc® 592C Flocculant	American Cyanamid Company - (Clerax Company)	Stockbridge Oil Room
ManVer® Hardness Indicator	Hach Company	Environmental Services Lab
ManVer® Hardness Indicator	Hach Company	Harrison Lab
Methanol, Purge and Trap Grade	Fisher Scientific	Environmental Services Lab
Methanol, Purge and Trap Grade	Fisher Scientific	Harrison Lab
Methyl Orange	Fisher Scientific Chemical Division	Environmental Services Lab
Methyl Orange	Fisher Scientific Chemical Division	Harrison Lab
Mineral Spirits Naptha-Solvent	American Sales Corporation	Building 21
Mineral Spirits Naptha-Solvent	American Sales Corporation	Harrison

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Mobil 1 15W-50 Advanced Fuel Synthetic Motor Oil	Exxon Mobil Corporation	Stockbridge Storage Room 2
Mobil Mobilith SHC PM 400 Synthetic Grease	Exxon Mobil Corporation	Harrison Stockroom
Mobil Mobilith SHC PM 400 Synthetic Grease	Exxon Mobil Corporation	Stockroom Harrison
MANN ZZ	Diversey Wyandotte Corporation	Stockbridge Oil Room
Muriatic Acid 22 Degree	Hawland Products Company	Pump Stations
N-1-Naphthylethylenediamine Dihydrochloride	Avantor Performance Materials, Inc.	Environmental Services Lab
N-1-Naphthylethylenediamine Dihydrochloride	Avantor Performance Materials, Inc.	Harrison Lab
NAPA Kool Cooling System Treatment	Wix Filtration Products Division, Affinia Group	Stockbridge Storage Room 2
NAPA Mac's Brake Fluid 41-B33	NAPA AUTO PARTS	Stockbridge Storage Room 2
Nickel in HNO3 1000ug/ml, 10,000ug/ml	Plasma Chem Corp	Stockbridge Oil Room
Nitric Acid (35-40%) 42 Degrees	Vigoro Industries, Inc.	Stockbridge Oil Room
Nitric Acid Trace Metal Grade	Fisher Scientific	Environmental Services Lab
Nitric Acid Trace Metal Grade	Fisher Scientific	Harrison Lab
Nitrite Standard Solution	Hach Company	Environmental Services Lab
Nitrite Standard Solution	Hach Company	Harrison Lab
No Sweat! Pipe Insulator	Continental Research Corporation	Harrison Stockroom
No Sweat! Pipe Insulator	Continental Research Corporation	Stockroom Harrison
o-Phosphoric Acid, 85% W/W, HPLC	EM Science	Environmental Services Lab
o-Phosphoric Acid, 85% W/W, HPLC	EM Science	Harrison Lab
Orange 88 Degreaser Multi-Purpose Cleaner Degreaser	Warsaw Chemical Co., Inc.	Building 20
Orange 88 Degreaser Multi-Purpose Cleaner Degreaser	Warsaw Chemical Co., Inc.	Harrison
Original Gorilla Glue	Gorilla Glue Company	Harrison Stockroom
Original Gorilla Glue	Gorilla Glue Company	Stockroom Harrison
Palladium in HNO3 2,000 ug/ml Matrix Modifier	Plasma Chem Corp	Stockbridge Oil Room
Percol® 720	Ciba Specialty Chemicals Water Treatments, Inc.	Stockbridge Oil Room
Perrinchem Reagents DPD Free Chlorine Reagent	Hach Company	Harrison Lab
Perrinchem Reagents DPD Free Chlorine Reagent	Hach Company	Trace Organics Lab
Perrinchem Reagents DPD Free Chlorine Reagent	Hach Company	Pump Stations
Perrinchem Reagents DPD Total Chlorine Reagent	Hach Company	Pump Stations
Perrinchem Reagents DPD Total Chlorine Reagent	Hach Company	Harrison Lab
Perrinchem Reagents DPD Total Chlorine Reagent	Hach Company	Trace Organics Lab
Perrinchem Reagents PhosVer 3 Phosphate Reagent	Hach Company	Harrison Lab
Perrinchem Reagents PhosVer 3 Phosphate Reagent	Hach Company	Trace Organics Lab
Perrinchem Reagents PhosVer 3 Phosphate Reagent	Hach Company	Pump Stations
Perrinchem High Tack Spray-A-Gasket Sealant	ITW Permabond	Stockbridge Storage Room 2
pH Reference Material	ERM a Waters Company	Environmental Services Lab
pH Reference Material	ERM a Waters Company	Harrison Lab
pH Reference Material	ERM a Waters Company	Trace Organics Lab
Phenolphthalein Solution 1%	Fisher Scientific	Environmental Services Lab
Phenolphthalein Solution 1%	Fisher Scientific	Harrison Lab
Phenylarsine Oxide Solution 0.00564N	Fisher Scientific	Environmental Services Lab

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Phenylarsine Oxide Solution 0.00564N	Fisher Scientific	Harrison Lab
Phosmie 27-XI Pipe Joint Lubricant, Water Dispersible	JTM Products, Inc. (Solon, OH)	Stockbridge Storage Room 1
Phosphorus	Hach Company	Environmental Services Lab
Phosphorus	Hach Company	Harrison Lab
Potassium Bicarbonate	Fisher Scientific Chemical Division	Environmental Services Lab
Potassium Bicarbonate	Fisher Scientific Chemical Division	Harrison Lab
Potassium Hydroxide	Fisher Scientific Chemical Division	Environmental Services Lab
Potassium Hydroxide	Fisher Scientific Chemical Division	Harrison Lab
Potassium Iodide	Fisher Scientific Chemical Division	Environmental Services Lab
Potassium Iodide	Fisher Scientific Chemical Division	Harrison Lab
Potassium Nitrate	Fisher Scientific	Environmental Services Lab
Potassium Nitrate	Fisher Scientific	Harrison Lab
Potassium persulfate	Fisher Scientific	Environmental Services Lab
Potassium persulfate	Fisher Scientific	Harrison Lab
Potassium Phosphate Dibasic	Fisher Scientific Chemical Division	Environmental Services Lab
Potassium Phosphate Dibasic	Fisher Scientific Chemical Division	Harrison Lab
Potassium Phosphate, Monobasic	Fisher Scientific Chemical Division	Environmental Services Lab
Potassium Phosphate, Monobasic	Fisher Scientific Chemical Division	Harrison Lab
Power Plus Degreaser OW 234	One Way Products	Building 21
Power Plus Degreaser OW 234	One Way Products	Harrison
Power Steering Fluid 9832	Wamen Oil Company, Inc.	Stockbridge Storage Room 2
Praxair K 144 L Flocculant	Solenis LLC	Building 2B
Praxair E 144 L Flocculant	Solenis LLC	Harrison
Premium Gear Oil (MP) 85W-140	Citgo Petroleum Corporation (TX)	Building 21
Premium Gear Oil (MP) 85W-140	Citgo Petroleum Corporation (TX)	Harrison
Pro Link Foaming Germicidal Cleaner	Pro-Link, Inc.	Stockbridge Storage Room 2
ProGuard Premium R&O 220	Lyden Oil Company	Building 21
ProGuard Premium R&O 220	Lyden Oil Company	Harrison
R&O 100	Pinnacle Oil Holdings, LLC	Building 21
R&O 100	Pinnacle Oil Holdings, LLC	Harrison
Reodycalt California 100	Merck	Harrison Lab
Reodycalt California 100	Merck	Trace Organics Lab
Reagent Alcohol 200 & 190 Proof	Decon Laboratories, Inc.	Environmental Services Lab
Reagent Alcohol 200 & 190 Proof	Decon Laboratories, Inc.	Harrison Lab
Reagent Alcohol 200 & 190 Proof	Decon Laboratories, Inc.	Environmental Services Lab
Reagent Alcohol 200 & 190 Proof	Decon Laboratories, Inc.	Harrison Lab
Reference Electrode Filling Solution	Thermo Fisher Scientific	Environmental Services Lab
Reference Electrode Filling Solution	Thermo Fisher Scientific	Harrison Lab
Regular Unleaded Gasoline	Lakeside Refining Company	Stockbridge Oil Room
Rock Salt	American Rock Salt Company LLC	Building 27
Rock Salt	American Rock Salt Company LLC	Harrison
Roost	General Chemical Company	Harrison Stockroom
Roost	General Chemical Company	Stockroom Harrison
Rust-Oleum High Performance Enamel Flat Black	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum High Performance Enamel Flat Black	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum High Performance Enamel Gloss White	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum High Performance Enamel Gloss White	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum High Performance Enamel Hunter Green	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum High Performance Enamel Hunter Green	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum High Performance Enamel Light Blue	Rust-Oleum Corporation	Harrison Stockroom

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Rust-Oleum High Performance Enamel Light Blue	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum High Performance Enamel Light Machine Gray	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum High Performance Enamel Light Machine Gray	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum High Performance Enamel Primer Flat Gray Primer	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum High Performance Enamel Primer Flat Gray Primer	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum High Performance Enamel Safety Blue	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum High Performance Enamel Safety Blue	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum High Performance Enamel Safety Orange	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum High Performance Enamel Safety Orange	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum High Performance Enamel Safety Purple	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum High Performance Enamel Safety Purple	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum High Performance Enamel Safety Red	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum High Performance Enamel Safety Red	Rust-Oleum Corporation	Stockroom Harrison
Rust-Oleum Industrial Choice Multi Purpose Enamel Safety Yellow	Rust-Oleum Corporation	Harrison Stockroom
Rust-Oleum Industrial Choice Multi Purpose Enamel Safety Yellow	Rust-Oleum Corporation	Stockroom Harrison
S-722 Foaming Degreaser	Beaver Research Company	Harrison Stockroom
S-722 Foaming Degreaser	Beaver Research Company	Stockroom Harrison
Salicylic Acid, Sodium Salt, 99+%	Fisher Scientific	Environmental Services Lab
Salicylic Acid, Sodium Salt, 99+%	Fisher Scientific	Harrison Lab
Sanit Component A	Orion Research (The Schrafft Center)	Stockbridge Oil Room
Secodyne 450	Secodyne, Incorporated	Stockbridge Oil Room
Selenium In HNO3 1000ug/ml, 10,000ug/ml	Plasma Chem Corp	Stockbridge Oil Room
Sodium Acetate Anhydrous	Fisher Scientific Part of Thermo Fisher Scientific Thermo Electronic LIS India PVT, LTD.	Environmental Services Lab
Sodium Acetate Anhydrous	Fisher Scientific Part of Thermo Fisher Scientific Thermo Electronic LIS India PVT, LTD.	Harrison Lab
Sodium Hexametaphosphate Food Grade	Innophos	Pump Stations
Sodium Hydrosulfite	Vinox Industries Inc.	Stockbridge Oil Room
Sodium Hydroxide	Fisher Scientific	Environmental Services Lab
Sodium Hydroxide	Fisher Scientific	Harrison Lab
Sodium Hypochlorite 3.2.5%	Ulrich Chemical, Inc.	Stockbridge Oil Room
Sodium Persulfate =98%	Fisher Scientific	Environmental Services Lab
Sodium Persulfate =98%	Fisher Scientific	Harrison Lab
Sodium Phosphate	Fisher Scientific	Environmental Services Lab
Sodium Phosphate	Fisher Scientific	Harrison Lab
Sodium Sulfate Anhydrous	Mallinckrodt Inc.	Environmental Services Lab
Sodium Sulfate Anhydrous	Mallinckrodt Inc.	Harrison Lab
Sodium Tetraborate Decahydrate	Fisher Scientific Chemical Division	Environmental Services Lab
Sodium Tetraborate Decahydrate	Fisher Scientific Chemical Division	Harrison Lab
SPADNS (Arsenic-Free) Fluoride Reagent, AccuVac Ampules	Hach Company	Harrison Lab
SPADNS (Arsenic-Free) Fluoride Reagent, AccuVac Ampules	Hach Company	Pump Stations

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SPADNSJ (Arsenic-Free) Fluoride Reagent		
AccuVac Ampules	Hach Company	Trace Organics Lab
Spartan Citro Shield Furniture Polish	Spartan Chemical Company, Inc.	Harrison Stockroom
Spartan Citro Shield Furniture Polish	Spartan Chemical Company, Inc.	Stockroom Harrison
Spartan SparClng Restroom Disinfectant	Spartan Chemical Co., Inc. (Maumee)	Harrison Stockroom
Spartan SparClng Restroom Disinfectant	Spartan Chemical Co., Inc. (Maumee)	Stockroom Harrison
Spartan 35E Carpet PreSpray & Spotter	Spartan Chemical Co., Inc. (Maumee)	Harrison Stockroom
Spartan 35L Carpet PreSpray & Spotter	Spartan Chemical Co., Inc. (Maumee)	Stockroom Harrison
Speed Crete Blue Line	Lucid Chemical Company (Cleveland)	Stockbridge Field Supervisors Area
Spray Nine Grease-Off Heavy Duty Degreaser	ITW Permaman	Stockbridge Storage Room 1
SSR Ecolant Code DC 010	Degussa-Huls Corporation (NJ)	Stockbridge Oil Room
Sta-88 Storage Fuel Stabilizer	Gold Eagle Company	Stockbridge Storage Room 2
Sta-Lube Synthetic Brake & Caliper Grease	CRC Industries, Inc.	Stockbridge Storage Room 2
Standard Tire Fix A Flat Inflator & Sealer	ITW Global Tire Repair, Inc.	Stockbridge Storage Room 2
Star-Brite Star-Tron Enzyme Fuel Treatment	Starbrite Inc	Harrison Stockroom
Star-Brite Star-Tron Enzyme Fuel Treatment	Starbrite Inc	Stockroom Harrison
State ADH II Spray Adhesive	State Industrial Products	Stockbridge Storage Room 2
State Apple Orchard Control	State Industrial Products	Harrison Stockroom
State Apple Orchard Control	State Industrial Products	Stockroom Harrison
State Formula 190-X Liquid Weed Killer	State Industrial Products	Harrison Stockroom
State Formula 190-X Liquid Weed Killer	State Industrial Products	Stockroom Harrison
State Mint Action Bowl & Urinal Cleaner Product # 121158	State Industrial Products	Harrison Stockroom
State Mint Action Bowl & Urinal Cleaner Product # 121158	State Industrial Products	Stockroom Harrison
State Shut Your Trap Dry Drain Treatment	State Industrial Products	Harrison Stockroom
State Shut Your Trap Dry Drain Treatment	State Industrial Products	Stockroom Harrison
State Zero In 50R Flying & Crawling Insect Killer	State Industrial Products	Harrison Stockroom
State Zero In 50K Flying & Crawling Insect Killer	State Industrial Products	Stockroom Harrison
STHL High Performance 2-Cycle Engine Oil	Omni Specialty Packaging, LLC	Harrison Stockroom
STHL High Performance 2-Cycle Engine Oil	Omni Specialty Packaging, LLC	Stockroom Harrison
Sulfuric Acid	Fisher Scientific	Environmental Services Lab
Sulfuric Acid	Fisher Scientific	Harrison Lab
Sulfuric Acid	Fisher Scientific	Ind. Services Lab
Sulfuric Acid Standard 0.500 N	Hach Company	Environmental Services Lab
Sulfuric Acid Standard 0.500 N	Hach Company	Harrison Lab
Super Friendly Air's Super Friendly Freeze It	Control Company	Stockbridge Oil Room
Teflon Dalkin	Norton Co./Salm-Gobain - (MA)	Stockbridge Oil Room
Tellis T-22	Sopus Products	Stockbridge Oil Room
Tellis T-68	Sopus Products	Stockbridge Oil Room
Tier One 10w30	Pinnacle Oil Holdings, LLC	Stockbridge Oil Room
Tier One 15w20	Pinnacle Oil Holdings, LLC	Stockbridge Oil Room
Tier One Lubricants Dexos 1 5w30	Nu-Tier Brands, Inc.	Stockbridge Oil Room
TISAB Solution for Fluoride Determination	EMD Millipore Corporation	Environmental Services Lab
TISAB Solution for Fluoride Determination	EMD Millipore Corporation	Harrison Lab
Total Ionic Strength Adjustment Buffer (TISAB II) with CDTA	Ricca Chemical Company LLC	Environmental Services Lab
Total Ionic Strength Adjustment Buffer (TISAB II) with CDTA	Ricca Chemical Company LLC	Harrison Lab
TR-XI-740	Degussa-Huls Corporation (NJ)	Stockbridge Oil Room
UGL Drylok Fast Plug	United Gilsonite Laboratories	Stockbridge Storage Room 2
Ultra Clean Professional Fuel System Cleaner	Gold Eagle Company	Stockbridge Storage Room 2
Un-Interv-Adel-Lin-Goo Grease Oil, Tar & Adhesives Remover	Core Products Co., Inc.	Harrison Stockroom

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Un-Believ-Abie! Uni-Goo Grease Oil, Tar & Adhesives Remover	Core Products Co., Inc.	Stockroom Harrison
United Laboratories Aero/Weld Aerosol PVC Purple Primer United 132	United Laboratories (IL)	Harrison Stockroom
United Laboratories Aero/Weld Aerosol PVC Purple Primer United 132	United Laboratories (IL)	Stockroom Harrison
United Laboratories Crevice Creeper, United 172	United Laboratories (IL)	Harrison Stockroom
United Laboratories Crevice Creeper, United 172	United Laboratories (IL)	Stockroom Harrison
United Laboratories Footlocker Slip Resistant Textured Epoxy Coating United 124	United Laboratories (IL)	Harrison Stockroom
United Laboratories Footlocker Slip Resistant Textured Epoxy Coating United 124	United Laboratories (IL)	Stockroom Harrison
United Laboratories Jungle Wipes United 678	United Laboratories (IL)	Harrison Stockroom
United Laboratories Jungle Wipes United 678	United Laboratories (IL)	Stockroom Harrison
United Laboratories Ten Strike Safe-Way Cleaner United 88	United Laboratories (IL)	Harrison Stockroom
United Laboratories Ten Strike Safe-Way Cleaner United 88	United Laboratories (IL)	Stockroom Harrison
United Laboratories United 455 Liqui-Zyme Odor Eliminator Cimarron	United Laboratories (IL)	Harrison Stockroom
United Laboratories United 455 Liqui-Zyme Odor Eliminator Cimarron	United Laboratories (IL)	Stockroom Harrison
United Laboratories United 67 E5A Total Washroom Cleaner	United Laboratories (IL)	Harrison Stockroom
United Laboratories United 67 E5A Total Washroom Cleaner	United Laboratories (IL)	Stockroom Harrison
United Laboratories United 77 Biotron Organic Digester and Liquid Drain Cleaner	United Laboratories (IL)	Harrison Stockroom
United Laboratories United 77 Biotron Organic Digester and Liquid Drain Cleaner	United Laboratories (IL)	Stockroom Harrison
Universal Pag Oil R134a Synthetic Refrigerant Oil	UJC, Inc.	Stockbridge Storage Room 2
Valvoline All-Flt Fleet Plus Heavy Duty Diesel SAE 15W-40 Engine Oil	Valvoline LLC	Harrison Stockroom
Valvoline All-Flt Fleet Plus Heavy Duty Diesel SAE 15W-40 Engine Oil	Valvoline LLC	Stockroom Harrison
Valvoline Dex/Merc Automatic Transmission Fluid	Valvoline LLC	Harrison Stockroom
Valvoline Dex/Merc Automatic Transmission Fluid	Valvoline LLC	Stockroom Harrison
Valvoline Full Synthetic SYN Power 5W-30	Valvoline LLC	Stockbridge Storage Room 2
Valvoline Premium Conventional SAE 10W-30 Motor Oil	Valvoline LLC	Harrison Stockroom
Valvoline Premium Conventional SAE 10W-30 Motor Oil	Valvoline LLC	Stockroom Harrison
WD-40	WD-40 Company	Stockbridge Storage Room 2
Weld-On 700 PVC, Clear, Low VOC	IPS Corporation	Harrison Stockroom
Weld-On 700 PVC, Clear, Low VOC	IPS Corporation	Stockroom Harrison
Whitmore's Decathlon PG 46 Synthetic Air Compressor Lubricant	Whitmore Manufacturing Company	Building 21
Whitmore's Decathlon PG 46 Synthetic Air Compressor Lubricant	Whitmore Manufacturing Company	Harrison
Wish Head ATF	Wish's Head Lubricants	Stockbridge Oil Room
Worthington Propane	Worthington Cylinder Corporation	Harrison Stockroom
Worthington Propane	Worthington Cylinder Corporation	Stockroom Harrison
X-Panda Pipe Joint Compound	X-Panda Products Company	Harrison Stockroom
X-Panda Pipe Joint Compound	X-Panda Products Company	Stockroom Harrison

Section 9: Attachment C

SWPPP for 415 E. Stockbridge Avenue



STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Stockbridge Facility

City of Kalamazoo
Department of Public Services
415 Stockbridge Avenue
Kalamazoo, Michigan 49001

September 2022

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1.0 GENERAL FACILITY INFORMATION

1.1 Contact and Permit Information

Facility Information:

- Name of Facility: **City of Kalamazoo Stockbridge Facility**
- Facility Address: **415 E Stockbridge Avenue, Kalamazoo, MI 49001**
- County: **Kalamazoo**
- Standard Industrial Classification (SIC) Code: **NA**
- Owner or Authorized Representative: **City of Kalamazoo, Department of Public Services**

Facility Contact Information:

- Name: **Anthony Ladd**
- Title: **Public Works Division Manager / Assistant Director**
- Telephone: **269-337-8717**
- Email Address: **ladda@kalamazoocity.org**
- Mailing Address: **415 E Stockbridge Avenue, Kalamazoo, MI 49001**

Certified Storm Water Operator Information:

- Name: **Tom Palumbo**
- Certification Number & Expiration Date: **22381, expiration 2026**
- Telephone: **269-337-8677**
- Email Address: **palumbot@kalamazoocity.org**
- Is the Certified Operator an employee at the facility: **X** Yes No

National Pollution Discharge Elimination System (NPDES) Permit Information:

- General Permit Number: **MIS040000**
- Certificate of Coverage (COC) or Individual Permit Number: **MI0060009**
- COC or Individual Permit Effective Date of Coverage: **9/1/2019**
- Receiving Waters: **Portage & Arcadia Creeks, Kalamazoo River mainstream 3 corridor**
- Required Monitoring: **X** Yes No
- Identify the Total Daily Maximum Load (TDML) listed on COC: **Total Phosphorus, E. Coli**

Brief Industrial Activity Description:

The Department of Public Services Stockbridge Facility (Facility) activities include:

- **Loading and unloading, and other material handling operations**
- **Outdoor storage including secondary containment structures**
- **Maintenance and cleaning of vehicles, machines, and equipment**
- **Fueling vehicles and equipment**

1.2 Facility Description

An aerial map and photographs of the Stockbridge Facility are included as **Figure 1** for reference. The Facility includes the Fleet Services Building which is used to repair and maintain City of Kalamazoo vehicles and equipment. There is an underground storage tank system located at the site for fueling the City's fleet. The Stockbridge Facility is also used by the Water Resources Division and Public Works Division of the Department of Public Services. Material, vehicles, and equipment are stored on site for use by the Department. Use areas are identified on **Figure 2** the Significant Material Use and Storage Map.

1.3 SWPPP Compliance and Modifications

This SWPPP will be evaluated, updated and amended when any of the following occurs:

1. At the time the permittee is reissued coverage under a new permit, whenever changes at the Facility have the potential to increase the exposure of significant materials to storm water.
2. Significant spills/leaks occur at the Facility.
3. When the SWPPP is determined by the permittee or the Department to be ineffective in achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity.
4. As necessary, to ensure the contact information is current.
5. A change in design, construction, operation or maintenance that has a significant effect on the potential for the discharge of pollutants to the Municipal Separate Storm Sewer System (MS4).
6. Inspections conducted in accordance with this SWPPP, Environmental Protection Agency (EPA) or the Michigan Department of Environment, Great Lakes, and Energy (EGLE) indicate deficiencies in the SWPPP or Best Management Practices (BMPs) prescribed in the SWPPP.
7. Multiple visual inspections of the storm water discharges or monitoring of the storm water discharges indicate pollutants have not been minimized or new sources of pollutants may need to be addressed, or
8. In accordance with the findings and recommendations of the annual Comprehensive Compliance Evaluation.

The SWPPP Completion Certificate Form is provided in Section 11.0. The Annual SWPPP Review Report Form is provided in **Appendix A**.

APPENDIX A – ANNUAL SWPPP REVIEW REPORT FORM

FIGURE 1 – GENERAL SITE MAP (AND PHOTOGRAPHS)

FIGURE 2 – SIGNIFICANT MATERIAL USE AND STORAGE MAP

2.0 STORM WATER POLLUTION PREVENTION TEAM

The storm water pollution prevention team is responsible for developing, implementing, maintaining, and revising this SWPPP. The members of the team and their primary responsibilities are as follows:

Name & Title	Responsibility
<i>Anthony Ladd, Public Works Division Manager / Assistant Director</i>	<i>Primary SWPPP contact; overall administration of SWPPP; signing the required certifications</i>
<i>Tom Palumbo, Senior Civil Engineer – Public Services, 22381</i>	<i>Secondary SWPPP contact; implementing, maintaining, record keeping, submitting reports, conducting routine, comprehensive, and visual inspections.</i>
<i>Scott Managhan, Environmental Services Technician III</i>	<i>Conducting MS4 outfall inspections, testing for non-stormwater discharges</i>
<i>Steve Rochow, Environmental Compliance Supervisor</i>	<i>Coordination of MS4 outfall inspections, testing for non-stormwater discharges</i>
<u>Additional members and their responsibility:</u> <i>Jean Talanda, Water Programs Manager – NPDES MS4 General Permit/Phase II Program Compliance</i>	

3.0 SITE MAPS

The Facility's site maps include the locations of all applicable items listed in the permit. Refer to **Figure 3 - Storm Structure and Drainage Area Map**, and **Figure 4 - Vegetation and Structural Controls Map** for the following applicable items:

1. Buildings and other permanent structures,
2. Storage or disposal areas for significant materials,
3. Secondary containment structures and descriptions of what they contain in the primary containment structures,
4. Storm water discharge points (which include outfalls and points of discharge), numbered or otherwise labeled for reference,
5. Location of storm water and non-storm water inlets (numbered or otherwise labeled for reference) contributing to each discharge point,
6. Location of NPDES permitted discharges other than storm water,
7. Outlines of the drainage areas contributing to each discharge point,
8. Structural runoff controls or storm water treatment facilities,
9. Areas of vegetation (with brief description such as lawn, old field, marsh, wooded, etc.),
10. Areas of exposed and/or erodible soils and gravel lots,
11. Impervious surfaces (roofs, asphalt, concrete, etc.),
12. Name and location of receiving waters, and
13. Areas of known or suspected impacts on surface waters as designated under Part 201 (Environmental Response) of the Natural Resources Environmental Protection Act of 1994, as amended (NREPA).

FIGURE 3 - STORM STRUCTURE AND DRAINAGE AREA MAP

FIGURE 4 - VEGETATION AND STRUCTURAL CONTROLS MAP

4.0 SIGNIFICANT MATERIALS

Definition: Significant materials are any material which could degrade or impair water quality, including but not limited to:

- ✓ Raw Materials
- ✓ Fuels
- ✓ Solvents
- ✓ Detergents
- ✓ Plastic pellets
- ✓ Finished materials (i.e., metallic products)
- ✓ Hazardous Substances designated under section 101(14) of 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 the Emergency Planning and Community Right-to-Know Act (EPCRA)
- ✓ Polluting Materials – Oil and any material, in solid or liquid form, identified as polluting material under the Part 5 Rules (Rules 324.2001 through 324.2009 of the Michigan Administrative Code)
- ✓ Hazardous Wastes as defined in Part 111 of the Michigan Act
- ✓ Fertilizers
- ✓ Pesticides
- ✓ Waste Products (i.e., ashes, slag, sludge, plant waste, animal waste)

The Significant Materials Inventory for the Stockbridge Facility is provided as **Table 1**.

TABLE 1 - SIGNIFICANT MATERIALS INVENTORY

4.1 Inventory of Exposed Significant Materials

Refer to **Table 2** – Exposed Significant Materials Inventory for a general inventory of significant materials that could enter storm water. For each material listed, this SWPPP includes the ways in which each type of material may have reasonable potential to become exposed to storm water (e.g., spillage during handling; leaks from pipes, pumps, or vessels; contact with storage piles, contaminated materials, or soils; waste handling and disposal; deposits from dust or overspray; etc.). In addition, the SWPPP identifies the inlet(s) that spilled/released significant materials may enter and the discharge point(s) through which the significant material may be discharged.

TABLE 2 - EXPOSED SIGNIFICANT MATERIALS INVENTORY

4.2 Description of Industrial Activities & Significant Material Storage Areas

The Facility has been evaluated for the reasonable potential of significant materials to reach storm water runoff from the following areas or activities:

- ✓ Loading, unloading, and other material handling operations
- ✓ Outdoor storage including secondary containment structures
- ✓ Outdoor manufacturing or processing activities
- ✓ Significant dust or particulate generating processes
- ✓ Discharge from vents, stacks, and air emission controls
- ✓ On-site waste disposal practices
- ✓ Maintenance and cleaning of vehicles, machines, and equipment
- ✓ Areas of exposed and/or erodible soils
- ✓ Sites of Environmental Contamination listed under Part 201
- ✓ Areas of significant material residues
- ✓ Areas where animals congregate (wild or domestic) and deposit wastes
- ✓ Other areas where storm water may contact significant materials

Results of the evaluation are included in **Table 3** – Significant material inventory and description of Industrial activity or Significant Material Storage Areas.

TABLE 3 - SIGNIFICANT MATERIAL INVENTORY AND DESCRIPTION OF INDUSTRIAL ACTIVITY OR SIGNIFICANT MATERIAL STORAGE AREAS

4.3 List of Significant Spills

There have been no reported significant spills at this Facility in the three years prior to the effective date of this SWPPP. In the event of a significant spill or leak of polluting material, it will be documented in the Lucity system. This listing will include the date, volume, exact location of release, and actions taken to clean up the material and/or prevent exposure to storm water runoff or contamination of surface waters of the state.

Additionally, the List of Significant Spills within this SWPPP will be updated as appropriate within 90 calendar days of obtaining knowledge of the spill or loss.

Reportable spills and releases under Part 201 or Part 213 of NREPA will be reported to EGLE using the Pollution Emergency Alert System (PEAS) Hotline. Information will be provided using EGLE's Spill or Release Report included as **Appendix B**.

APPENDIX B – EGLE SPILL OR RELEASE REPORT FORM

4.4 Summary of Storm Water Discharge Sampling Data

Per the NPDES permit, a summary is provided below of existing storm water discharge sampling data describing pollutants in storm water discharges associated with industrial activity at the Facility.

Summary of Sampling Information:

A Section 319 Nonpoint Source Pollution Grant was awarded to The Forum of Greater Kalamazoo to update the existing Portage and Arcadia Creeks Watershed Management Plan to meet the EPA's nine watershed management plan elements. As part of this project, limited wet weather sampling of stormwater runoff was conducted at existing city-owned sites, and will be conducted as needed at future sites of best managing practices.

One of the selected locations for sampling was the Stockbridge Facility since it has an existing Aqua Swirl stormwater treatment structure.

Two sampling locations were used: an "Aqua Swirl In" (Inlet) which is an inlet immediately upgradient to the Aqua Swirl, and "Aqua Swirl Out" (Outlet) immediately at the Aqua Swirl discharge point prior to Portage Creek.

Total stormwater collected area was 1091 acres.

Results of the on-time composite sampling event were as follows:

Inlet – Total Suspended Solids (TSS): 155 mg/L;

Total Phosphorus (TP): <0.01 mg/L

Outlet – TSS: 103 mg/L

Estimated site-specific annual loads (lbs/yr) for TP and TSS for the Inlet are:

TP: 0.04 lbs/ac/yr; 0.07 lbs/yr

TSS: 1.134 lbs/ac/yr; 2.167 lbs/yr

In summary, the current Aqua Swirl unit is preventing an estimated 737 lbs. of sediment annually from entering Portage Creek.

4.5 Actions Taken to Investigate Illicit Connections

One above-ground illicit connection to the Stockbridge Facility storm system has been identified and is in the process of being resolved. If future illicit connections to the Municipal Separate Storm Sewer Systems or waters of the state are suspected or found, they may be investigated using dye testing. The City's dye testing Certification of Approval can be found in **Appendix C** along with the dye testing Safety Data Sheets (SDSs).

Illicit connections found to be non-storm water will be permanently plugged or re-routed to the sanitary sewer system, in accordance with the authorization from the Kalamazoo Water Reclamation Plant. Any discharge from an illicit connection is a violation of the conditions of this permit. If an illicit connection is identified, a resolution will be proposed to the Public Service's Stormwater Engineer for approval prior to implementation.

Illicit connections will be documented in Lucity per the City's MS4 NPDES permit requirements:

Actions taken to investigate and eliminate any illicit connections to the storm sewer system:

On 8/17/2022 an above grade flow was found discharging onto the Stockbridge site from neighboring property, 326 Lake Street.

8/17/2022 – Observation

8/21/2022 – IDEP Investigation

8/31/2022 – Contact with Landowner, confirmed groundwater discharge from sump pump, plan in process to connect flow, below-grade, to MS4 system.

APPENDIX C – DYE TESTING CERTIFICATE OF APPROVAL AND DYE SDSs

5.0 NON-STRUCTURAL CONTROLS

Non-structural controls implemented at the Stockbridge Facility are intended to reduce the amount of pollution getting into the surface waters of the state and are generally implemented to address the problem at the source. They do not require any structural changes to the Facility. These are everyday types of activities undertaken by employees at the Facility. The SWPPP for this Facility, at a minimum, includes each of the following non-structural controls:

5.1 Preventative Maintenance Program (Routine Inspection Program)

The routine preventive maintenance inspection tasks and frequency are outlined in **Table 4** Action Matrix which includes inspection and maintenance of storm water management and control devices as well as inspecting and testing plant equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters. A written report of the inspection and corrective actions shall be maintained in the Lucity system and shall be retained for at least three years.

5.2 Housekeeping Procedures (Routine Inspection Program)

This SWPPP includes a written outline and a schedule to implement routine inspections in order to maintain a clean, orderly facility. Routine inspections are preventative measures which are intended to reduce the potential for significant materials to come in contact with storm water. Inspections and corrective actions will be maintained on file in the Lucity system and will be retained for a minimum of three years. The Lucity Routine Inspection Form can be found in **Appendix D**. The table below describes the Routine Inspection Program:

Routine Inspection Program Procedures Table		
Underground Storage Tanks (USTs)	Inspect for leaks, using stick reading, fuel pump reading, Veederroot tank monitoring system. Check for damage or maintenance needs.	Monthly
UST Fuel Dispensing Pumps	Inspect for spills and leaks (stains, odors)	Monthly
Metal dumpster storage area	Inspect for damage, lids are closed	Monthly
Fleet services, oil storage room	Inspect for leaks	Daily
Aqua Swirl Stormwater Treatment Device	Inspect for sediment and floatables; remove material by Vector truck as necessary	Annually
General outside property area	Inspect for sediment and debris – remove as necessary	Monthly

The Aqua Swirl BMP will be inspected as indicated on the BMP Inspection Form included as **Appendix E**.

APPENDIX D – LUCITY ROUTINE INSPECTION FORM

APPENDIX E – BMP INSPECTION FORM

TABLE 4 – STORMWATER POLLUTION PREVENTION PLAN ACTION MATRIX

5.3 Comprehensive Site Inspection & Visual Assessments of Storm Water Discharges

Comprehensive site inspections will be completed quarterly and include, but not be limited to, the areas identified in the routine inspection program. In addition, a review of the routine site inspection reports, and any other paperwork associated with the SWPPP will be reviewed during each comprehensive inspection. The comprehensive site inspection will be conducted by the Industrial Storm Water Certified Operator (Operator) quarterly. At a minimum one inspection will be performed within each of the following quarters: January – March, April – June, July – September, and October – December.

A report of the comprehensive site inspection results will be prepared and retained for at least three years. The report will include the following information:

- ✓ Date of the inspection
- ✓ Name(s), title(s), and certification number(s) of the personnel conducting the inspection
- ✓ Precipitation information (i.e., a description of recent rainfall or snow melt events)
- ✓ All observations relating to the implementation of control measures
- ✓ Any required revisions to the SWPPP resulting from the inspection
- ✓ A certification stating the facility is in compliance with this permit and the SWPPP, or, if there are instances of noncompliance, they are identified

The Comprehensive Site Inspection Form can be found in **Appendix F**.

Comprehensive site inspection schedule:

Quarter 1 Inspection: January

Quarter 2 Inspection: April

Quarter 3 Inspection: July

Quarter 4 Inspection: October

Comprehensive site inspection written procedures: The Industrial Storm Water Certified Operator will perform the comprehensive site inspections. All areas and items identified in Routine Inspection Procedures Table are included in the comprehensive site inspections. In addition, all paperwork associated with the routine inspections will be reviewed. The comprehensive site inspection report form will include a compliance certification statement.

The Visual Assessments will be conducted quarterly by the Operator. Visual assessment training/Informational tutorials will be conducted utilizing available material on the EGLE, Water Resources Division Industrial Storm Water webpage or by clicking on the following links:

- Part 1: https://www.youtube.com/watch?v=rhXbA1R_VZk&feature=youtu.be
- Part 2: https://www.youtube.com/watch?v=AdGziksz_g&feature=youtu.be
- Part 3: <https://www.youtube.com/watch?v=ZiajZM6AvIq&feature=youtu.be>

The Visual Assessment Procedures and the Visual Assessment Report Form can be found in **Appendix G**.

Visual Assessment schedule:

Quarter 1 sample: January – March

Quarter 2 sample: April – June

Quarter 3 sample: July – September

Quarter 4 sample: October - December

APPENDIX F - COMPREHENSIVE SITE INSPECTION FORM

APPENDIX G – VISUAL ASSESSMENT PROCEDURES & REPORTING FORM

5.4 Material Handling & Spill Prevention / Clean-Up Procedures

The table below includes a description of material handling procedures and storage requirements for significant materials. Equipment and procedures for cleaning up spills are identified and made available to the appropriate personnel. The procedures identify measures to prevent spilled materials or material residues on the outside of the containers from being discharged into storm water.

Question: Does the facility have any additional material handling & spill / clean-up procedures on file in addition to the SWPPP? No Yes

- If the answer is "No" complete the table below
- If the answer is "Yes" then reference the procedures and where they are located here and complete the table below as necessary:

2011 Spill Response Documents for the Stockbridge Facility, 2022 Public Services Spill Response Packet

Spills and leaks together are the largest industrial source of storm water pollution. Thus, this SWPPP specifies material handling procedures and storage requirements for significant materials. Equipment and procedures necessary for cleaning up spills and preventing the spilled materials from being discharged have also been identified. The Facility's equipment inventory and storage locations are provided on **Table 5 – Spill Kit inventory**. All employees have been made aware of the proper procedures.

The EGLE, WRD Industrial Storm Water program spill report compliance assistance document will be kept with the SWPPP. The EGLE, WRD Industrial Storm Water webpage is available by clicking on the following link: http://www.michigan.gov/documents/EGLE/wrd-lsw-permit_info-spill-reporting_398791_7.pdf.

Material handling and spill prevention / clean-up procedures not addressed in other Facility documents are provided in the following table:

Material Handling & Spill Prevention / Clean-up Procedures Table		
Potential Spill Area	Material Handling & Storage Procedures	Spill Response Procedures & Equipment
<i>UST fuel dispensing pumps</i>	<i>Auto-shutoffs; spill containment kit.</i>	<i>Oil dry; fire extinguisher; storm drain cover; contact Hazmat Team if significant</i>
<i>Oil storage room</i>	<i>Secondary containment</i>	<i>Oil dry; fire extinguisher; storm drain cover; contact Hazmat Team if significant</i>

TABLE 5 – SPILL KIT INVENTORY

5.5 Soil Erosion & Sedimentation Control Measures

Areas have been identified which, due to topography, activities, or other factors, have a high potential for significant soil erosion. Areas commonly prone to soil erosion are: gravel lots, bare earth or gravel at material handling areas around storm water inlets, areas with concentrated storm water runoff into streams or ditches, and access roads over open streams or ditches. Control measures have been implemented in areas prone to soil erosion and sedimentation.

Question: Is dust suppression material used on site? Yes No

- If "Yes" then describe the actions implemented to prevent an unauthorized discharge to the storm sewer system or surface waters of the state:

Question: Are there areas of the site that are prone to soil erosion and/or sedimentation? Yes No

- If "Yes" then complete the table below:

Soil Erosion & Sedimentation Control Measures Table	
Areas Prone to Soil Erosion or Sedimentation	Control Measures Implemented
<i>Portage Creek bank</i>	<i>Vegetation maintained along bank of creek, fenced as to not disrupt the area.</i>

5.6 Employee Training Program

An employee training program has been implemented to inform appropriate personnel at all levels of responsibility of the components and goals of the SWPPP. This is annual employee training. Training videos will be made available through the Public Services Water Programs Manager. In addition, an employee training video is available at the EGLE, WRD, Industrial Storm Water webpage or by clicking on the following link:

<https://www.youtube.com/watch?v=lgqvsztquRA&feature=youtu.be>

Employee training is a major component in ensuring the success of this Facility's SWPPP. The more knowledgeable all employees are about the Facility's SWPPP and what is expected of them, the greater the chance that this plan will be effective.

The Employee Training Form can be found in **Appendix H**.

Employee Training Frequency: **Annually and/or upon hire**

Employee Training Program Description: **E-Learning**

APPENDIX H – EMPLOYEE TRAINING FORM

5.7 TMDL Requirements

There is a Total Maximum Daily Load (TMDL) established by the Department for the receiving water, which restricts the discharge of Phosphorus to Portage & Arcadia Creeks, and the Kalamazoo River mainstream 3 corridor. The Facility has controls in place to comply with the TMDL.

The TMDL means the amount of pollutant load a water body, such as a lake or stream, can assimilate and still meet water quality standards. If a receiving water body does not meet the water quality standards for a specific pollutant, the EGLE will establish the appropriate daily maximum load for that pollutant to allow the water body to again meet water quality standards. If a permitted facility is expected to discharge that specific pollutant in its storm water to that water body, the General Permit requires the facility to list actions it will take to meet that TMDL requirement.

Question: Is there a TMDL Requirement listed on the COC? Yes No

- If the answer to the above question is "Yes" then complete the table below:

TMDL Pollutant:	Best Management Practices Implemented to reduce the discharge of the TMDL pollutant:
Phosphorus	<i>Aqua Swirl Treatment Device treats all storm water for sediment and floatables prior to being discharged into Portage Creek.</i>

5.8 List of Significant Materials Still Present

There are no expected ongoing significant materials present in storm water entering the MS4 at this site following implementation of non-structural controls and structural controls.

Significant Material	Location and Control Measure:	Impacted Inlet(s):	Impacted Discharge Point(s):
None expected	<i>If present, material will be treated though structural control measure listed in Section 6.0</i>	none	none

6.0 STRUCTURAL CONTROLS

This section provides a description of the location, function, and design criteria of structural controls for prevention and treatment. These structural controls are in addition to the implementation of non-structural controls listed in the previous section.

These structural controls are used to treat, divert, isolate, recycle, reuse, or otherwise manage storm water in a manner that reduces the level of significant materials in the storm water and provides compliance with the Water Quality Standards.

Examples of structural controls include the following:

- ✓ Signs and Labels
- ✓ Safety Posts
- ✓ Fences
- ✓ Security Systems
- ✓ Temporary and Permanent Coverings
- ✓ Storm Water Conveyances
- ✓ Diversion Dikes
- ✓ Grading
- ✓ Paving
- ✓ Curbing
- ✓ Drip Pans
- ✓ Secondary Containment
- ✓ Catch Basin Inserts
- ✓ Detention and Retention Ponds
- ✓ Vegetative Filters
- ✓ Oil/Water Separators

Below is a description of the manufactured treatment device structural control used at this Facility. Refer to **Figure 4** for all structural controls on site.

Question: Are structural control measures used at the facility? No Yes

- If answer above is "Yes" then complete the appropriate information in the table below.

Structural Controls Used at the Facility		
Description of structural control(s)	Location of structural control(s)	Significant Materials intended to be managed by the structural control(s)
<i>Aqua Swirl AS4</i>	<i>East end of parking lot</i>	<i>Sedimentation & Debris</i>

FIGURE 4 – VEGETATION AND STRUCTURAL CONTROLS MAP

7.0 NON-STORM WATER DISCHARGES

Currently there are no unauthorized non-storm water discharges at the site that need separate permits or approvals.

Storm water shall be defined to include all of the following non-storm water discharges provided pollution prevention controls for the non-storm water component are identified in the SWPPP.

Discharges from fire-fighting activities are authorized by the permit but are exempted from the requirement to be identified in the SWPPP.

Any non-storm water discharges discovered on site will be investigated and recorded in the Lucity system. These will be handled pursuant to our Illicit Discharge Elimination Program promulgated in our MS4 permit.

Question: is any of the 10 non-storm water discharges listed below applicable to the facility? No Yes

- if the answer is "Yes" then complete the appropriate sections of the following form:

Check the Applicable Non Storm Water Discharges at the Facility:	Pollution Prevention Controls Implemented:	Impacted Inlet(s):	Impacted Discharge Point(s):	
<input checked="" type="checkbox"/>	1. Discharges from fire hydrant flushing	Aqua Swirl AS4 manufactured treatment device	STLBKC221540 STCBKC223616 STCBKC223629	STOWKC223626 (North Outfall)
<input type="checkbox"/>	2. Potable water sources including water line flushing			
<input type="checkbox"/>	3. Water from fire system testing and fire-fighting training without burned materials or chemical fire suppressants			
<input type="checkbox"/>	4. Irrigation drainage			
<input type="checkbox"/>	5. Lawn watering			
<input type="checkbox"/>	6. Routine building wash-down that does not use detergents or other compounds			
<input type="checkbox"/>	7. Pavement wash waters where contamination by toxic or hazardous materials has not occurred (unless all contamination by toxic or hazardous materials has been removed) and where detergents are not used			
<input type="checkbox"/>	8. Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids			
<input checked="" type="checkbox"/>	9. Uncontaminated ground water	See Section 4.5	STCBKC222250	STOWKC223626 (North Outfall)
<input type="checkbox"/>	10. Foundation or footing drains where flows are not contaminated with process materials such as solvents			

8.0 ANNUAL REVIEW

The SWPPP will be reviewed annually the reviews will be maintained in the Lucity system. Based on the review, the SWPPP will be amended as needed to ensure continued compliance with the terms and conditions of the MS4 permit.

APPENDIX A – ANNUAL SWPPP REVIEW REPORT FORM

9.0 INDUSTRIAL STORM WATER CERTIFIED OPERATOR UPDATE

If the Industrial Storm Water Certified Operator is changed or an additional Operator is added, the name and certification number of the new Operator shall be documented in the SWPPP. All Operators at the Stockbridge Facility will be listed, in Section 11.0.

10.0 RECORD KEEPING


The City will maintain records of all SWPPP related inspection and maintenance activities. Records will also be kept describing incidents such as spills or other discharges that can affect the quality of storm water runoff. All such records will be retained in the Lucity system for at least three years. The following records are required for the Stockbridge Facility:

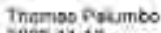
- ✓ Routine Inspection reports data (refer to Section 5.1)
- ✓ Comprehensive site inspection reports data (refer to Section 5.3)
- ✓ Documentation of visual assessments data (refer to Section 5.3)
- ✓ Employee training records data (refer to Section 5.6)
- ✓ Written summaries of the annual SWPPP review data (refer to Section 8.0)
- ✓ Short Term Storm Water Characterization Study data (refer to Section 4.4)

11.0 SWPPP CERTIFICATION

The SWPPP will be reviewed and signed by the Certified Storm Water Operator(s) and by either the permittee or an authorized representative in accordance with 40 CFR 122.22. The SWPPP will be retained on-site at the Facility.

I certify under penalty of law that the storm water drainage system in this SWPPP has been tested or evaluated for the presence of non-storm water discharges either by me, or under my direction and supervision. I certify under penalty of law that this SWPPP has been developed in accordance with the General Permit and with good engineering practices. To the best of my knowledge and belief, the information submitted is true, accurate, and complete. At the time this plan was completed no unauthorized discharges were present. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

Permittee or Authorized Representative	
Printed Name & Title: Anthony Ladd, Public Works Division Manager / Assistant Director	
Signature & Date:	 <small> Digitally signed by Anthony Ladd DN: cn=Anthony Ladd, o=City of Hamilton, ou=Engineering, c=Canada, email=anthony.ladd@cityofhamilton.ca </small>

Industrial Storm Water Certified Operator	
Printed Name & Certification Number: Tom Palumbo, Senior Civil Engineer – Public Services, 22381	
Signature & Date:	 Thomas Palumbo 2022.11.13 18:04:08-05'00

Space to list additional Storm Water Certified Operators if Necessary	
Printed Name & Certification Number	Signature & Date

APPENDICES

APPENDIX A- ANNUAL SWPPP REVIEW REPORT FORM

Facility Information	
Designated Name:	Certificate of Coverage No. <u>or</u> Individual Permit No.:
Facility Address:	County:
Facility Contact Information	
Name:	Telephone No.:
Email Address:	Certification No.:
Backup Facility Contact Information	
Name:	Telephone No.:
Email Address:	Certification No.:
Industrial Storm Water Certified Operator Information	
Name:	Telephone No.:
Email Address:	Certification No.:
Space to list additional operators if applicable:	

The SWPPP Checklist on the EGLE, WRD Industrial Storm Water webpage should be used to review the facility's SWPPP and before the following 10 questions are completed.

1. Facility general information is current and accurate	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
2. Site map is current and accurate	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
3. Significant material inventory is current and accurate	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
4. New exposures, processes and related controls have been documented appropriately in the SWPPP	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
5. Spills have been recorded and reported as appropriate	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
6. Employee SWPPP training was conducted and documented	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
7. Records of routine preventative maintenance and housekeeping inspections are available in the SWPPP file	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
8. Comprehensive site inspections have been completed, certified and filed in the SWPPP file	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
9. Visual Assessments have been completed and the reports have been filed in the SWPPP file	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
10. Corrective actions noted in the inspection reports have been completed	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
11. The SWPPP is compliant with the permit and has been reviewed and signed by the Certified Storm Water Operator and the permittee or designated representative	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Additional Comments:			

I certify that the above information is correct:	
Name:	Signature / Date:

SUBMIT THIS FORM TO THE EGLE, WRD DISTRICT OFFICE IDENTIFIED ON YOUR CERTIFICATE OF COVERAGE ON OR BEFORE JANUARY 10TH OF EACH YEAR

APPENDIX B - EGLE SPILL OR RELEASE REPORT FORM



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
ENVIRONMENTAL SUPPORT DIVISION

SPILL OR RELEASE REPORT

NOTE: Some State and Federal regulations require a specific form to use and procedures to follow when reporting a release. Those forms and procedures **MUST** be used and followed if reporting under those regulations. Please refer to the Michigan Reporting Requirements Tool to aid you in determining the proper form to use. This report form, although not required to be used, is designed to aid person to report releases under regulations. To report a release, some regulations require a facility to call the EGLE PEAS Hotline at

800-292-4706 (or the EGLE District Office that oversees the county where it occurred) and other agencies and provide information that is included in this form. This form may also be used for the written follow-up report to the department. If you prefer to submit this report electronically by FAX or e-mail, contact the regulating agency for the correct telephone number or e-mail address. Go to www.michigan.gov/chemrelease for more information.

Please print or type all information.

Name of Person Submitting Written Report		Title of Person Submitting Written Report		Telephone Number (provide area code)	
Name of Business			Release Location (Provide address if different than business, if known, and give directions to the spill location. Include nearest highway, town, road intersection, etc.)		
Street Address					
City	State	ZIP			
Business Telephone Number (provide area code)					
Site Identification Number and Other Identifying Numbers (if applicable)		County	Township	Tier/Range/Section (if known)	
Release Data: Complete all applicable categories. Check all the boxes that apply to the release. Provide the best available information regarding the release and its impacts. Attach additional pages if necessary.					
Date of Release (if known)	Date of Discovery	Duration of Release (if known)	Type of Incident		
Time of Release (if known)	Time of Discovery	<input type="checkbox"/> days <input type="checkbox"/> hours <input type="checkbox"/> minutes	<input type="checkbox"/> Explosion <input type="checkbox"/> Loading/unloading release <input type="checkbox"/> Fire <input type="checkbox"/> Pipe/valve leak or rupture <input type="checkbox"/> Leaking container <input type="checkbox"/> Vehicle accident <input type="checkbox"/> Other <input type="text"/>		
am pm Material Released (chemical or trade name) <input type="checkbox"/> Check here if additional materials listed on the attached page		CAS Number or Hazardous Waste Code	Estimated Quantity Released (indicate unit e.g. lbs, gals, cu ft or yds)	Physical State Released (indicate if solid, liquid, or gas)	

Factors Contributing to Release		Source of Loss	
<input type="checkbox"/> Equipment failure <input type="checkbox"/> Operator error <input type="checkbox"/> Faulty process design		<input type="checkbox"/> Training deficiencies <input type="checkbox"/> Unusual weather conditions <input type="checkbox"/> Other <input style="width:100%;" type="text"/>	
		<input type="checkbox"/> Container <input type="checkbox"/> Railroad car <input type="checkbox"/> Pipeline <input type="checkbox"/> Ship	
		<input type="checkbox"/> Tanker <input type="checkbox"/> Tank <input type="checkbox"/> Truck <input type="checkbox"/> Other <input style="width:100%;" type="text"/>	
Type of Material Released	Material Listed on or Defined by	Immediate Actions Taken	
<input type="checkbox"/> Agricultural: manure, pesticide, fertilizer <input type="checkbox"/> Chemicals <input type="checkbox"/> Flammable or combustible liquid <input type="checkbox"/> Hazardous waste <input type="checkbox"/> Liquid industrial waste <input type="checkbox"/> Oil/petroleum products or waste <input type="checkbox"/> Salt <input type="checkbox"/> Sewage <input type="checkbox"/> Unknown <input type="checkbox"/> Other <input style="width:100%;" type="text"/>	<input type="checkbox"/> CAA Section 112(r) list (40 CFR Part 68) <input type="checkbox"/> CERCLA Table 302.4 (40 CFR Part 302) <input type="checkbox"/> EPCRA Extremely Hazardous Substance (40 CFR Part 355) <input type="checkbox"/> NREPA Part 31, Part 5 Rules polluting material <input type="checkbox"/> NREPA Part 111 or RCRA hazardous waste <input type="checkbox"/> NREPA Part 121 liquid industrial waste <input type="checkbox"/> Unknown <input type="checkbox"/> Other <input style="width:100%;" type="text"/>	<input type="checkbox"/> Containment <input type="checkbox"/> Diversion of release to treatment <input type="checkbox"/> Dilution <input type="checkbox"/> Evacuation <input type="checkbox"/> Decontamination of persons or equipment <input type="checkbox"/> Hazard removal <input type="checkbox"/> Neutralization <input type="checkbox"/> Monitoring <input type="checkbox"/> System shut down <input type="checkbox"/> Other <input style="width:100%;" type="text"/>	
Release Reached			
<input type="checkbox"/> Surface waters (include name of river, lake, drain involved) <input style="width:100%;" type="text"/>			
<input type="checkbox"/> Distance from spill location to surface water, in feet <input style="width:100%;" type="text"/>			
<input type="checkbox"/> Drain connected to sanitary sewer (include name of wastewater treatment plant and/or street drain, if known) <input style="width:100%;" type="text"/>			
<input type="checkbox"/> Drain connected to storm sewer (include name of drain or water body it discharges into, if known) <input style="width:100%;" type="text"/>			
<input type="checkbox"/> Groundwater:			
Is it a known or suspected drinking water source? Yes <input type="checkbox"/> No <input type="checkbox"/>			
What is the name of aquifer, if known? <input style="width:100%;" type="text"/>			
<input type="checkbox"/> Soils (include type e.g. clay, sand, loam, etc.) <input style="width:100%;" type="text"/>			
<input type="checkbox"/> Ambient Air			
<input type="checkbox"/> Spill contained on impervious surface			
Extent of Injuries(if any)	Was Anyone Hospitalized?	Number of Injuries Treated Onsite:	
	<input type="checkbox"/> Yes Number Hospitalized: <input style="width:50px;" type="text"/> <input type="checkbox"/> No	<input style="width:50px;" type="text"/>	

Describe the incident, the type of equipment involved in the release, how the volume of loss was determined, along with any resulting environmental damage caused by the release. Identify who immediately responded to the incident (own employees or contractor — include cleanup company name, contact person, and telephone number). Also identify who did further cleanup activities if performed or known when report submitted.

Check here if description or additional comments are included on attached page

Estimated quantity of any recovered materials and a description of how those materials were managed (include disposal method if applicable)

Check here if description or additional comments are included on attached page

Assessment of actual or potential hazards to human health (Include known acute or immediate and chronic or delayed effects, and where appropriate, advice regarding medical attention necessary for exposed individuals.)

Check here if description or additional comments are included on attached page

Michigan Department of Environment, Great Lakes, and Energy Notified

Initial Contact by: Phone FAX
 Email Other

Date of Initial Contact

Time of Initial Contact

All EGLE Staff Contacted Telephone Number

All EGLE Staff Contacted	Telephone Number

Name of Person Making Initial Report

Title of Person Making Initial Report

Contact made by calling EGLE Pollution Emergency Alerting System (PEAS):
800-292-4706

Log Number Assigned

EGLE District or Field Office:

- Bay City Cadillac Calumet
- Crystal Falls Detroit Gaylord
- Grand Rapids Jackson Kalamazoo
- Lansing Marquette Newberry
- Warren

Note: EGLE Office locations are subject to change

Divisions or Offices Contacted

- Air Quality Division
- Drinking Water and Environmental Health Division
- Environmental Support Division
- Materials Management Division
- Office of Climate and Energy
- Office of the Clean Water Public Advocate
- Office of the Environmental Justice Public Advocate
- Office of the Great Lakes
- Oil, Gas, and Minerals Division
- Remediation and Redevelopment Division
- Water Resources Division

APPENDIX C- DYE TESTING CERTIFICATION AND SDSs

GENERAL RULE 97 CERTIFICATION OF APPROVAL

R97-20/001

In compliance with the provisions of Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA), and Rule R323.1097 of the Part 4, Water Quality Standards, promulgated thereunder, tracer dyes containing certain active ingredients are authorized to be applied to surface waters of the state, directly or indirectly, for the purpose of identifying and eliminating illicit discharges and cross connections; identifying pipeline and tank failures during hydrostatic pressure testing, discharge point location studies, mixing zone mapping, or time-of-passage studies by an entity submitting a complete Notification of Intent under this certification. This certification does not authorize the discharge of tracer dyes for any purposes other than those noted above.

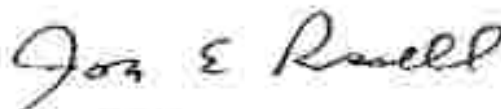
The Notice of Intent and instructions for its submittal are available from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Web site at <https://www.michigan.gov/egle/about/organization/water-resources/rule-97-certifications> or by contacting Water Resources Division at 517-284-5567 or by emailing Sue Ashcraft, Lansing District Office, Water Resources Division at AshcraftS@Michigan.gov.

The application or discharge of tracer dyes to surface waters of the state is authorized by this certification only under, and contingent upon, full compliance with the following conditions:

1. A complete Notice of Intent is submitted.
2. The extent of the dye plume(s) in waters of the state shall be minimized to the maximum extent practicable.
3. The application of tracer dye(s) shall be conducted in accordance with all pertinent label instructions and additional restrictions identified in this certification.
4. Only the tracer dye(s) containing the active ingredients identified in the Acceptable Michigan Tracer Dye List (<https://www.michigan.gov/egle/-/media/Project/Websites/egle/Documents/Programs/WRD/SWAS/rule97-acceptable-dye.pdf>) are authorized under this certification. Upon authorization, the dyes shall only be applied at concentrations resulting in active ingredient concentrations at or below the concentration limit. The active ingredient Chemical Abstract Service (CAS) number and concentration to be used shall also be identified in the applicant's Notification of Intent in order to be authorized.
5. The following agencies shall be notified 48 hours prior to application:
 - Local Municipality (city, township, village, etc.)
 - Local County Health Department
 - Downstream Health Departments if they could be potentially affected.
 - Local Area Emergency Coordinator

6. EGLE, Water Resources Division (WRD), staff shall also be notified 48 hours prior to applications of tracer dyes directly to surface waters of the state. WRD staff must also be notified if visible discharges of tracer dyes are observed in the surface waters of the state as a result of indirect application (illicit discharge and connections studies or discharge point location). Notification to WRD staff shall be as follows:
 - During normal working hours, please contact the appropriate WRD District Office <https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/About-Us/district-offices.pdf>.
 - After hours, weekends, or holidays, please contact the Pollution Emergency Alert System (PEAS) at 1-800-292-4706.
7. The entity applying the tracer dye(s) to the surface waters of the state, or to another area that has the potential to enter waters of the state, shall retain records for a minimum of three years from the date of dye application identifying treatment locations; dates of treatment; name of applicator(s); and the name, CAS number, and concentration of the active ingredient applied at each location.
8. In the event that any of the conditions of this certification are not, or may not be met, the entity applying the tracer dye(s) shall immediately notify the appropriate WRD District Office staff <https://www.michigan.gov/-/media/Project/Websites/egle/Documents/Programs/WRD/About-Us/district-offices.pdf> of the area in which the application occurred.
9. The issuance of this certification does not authorize the violation of any federal, state, or local laws or regulations, nor does it obviate the necessity of obtaining such permits, including any other EGLE permits or approvals from other units of government as may be required by law.

Issued this 7th day of December 2021, by EGLE, this Certification of Approval shall become effective on January 1, 2022, and shall expire at midnight on December 31, 2023.



Jon Russell, Manager
Field Operations Section – Lakes Erie and Huron
Water Resources Division

Talanda, Jean

From: Ashcraft, Susan (EGLE) <ASHCRAFTS@michigan.gov>
Sent: Thursday, September 8, 2022 11:22 AM
To: Talanda, Jean
Subject: [External Email] FW: Tracer Dye Approval for City of Kalamazoo-Kalamazoo River, Arcadia Creek, Axtell Creek, et al.-Kalamazoo County
Attachments: 2022-2023 wrd-rule-97-dye_675423_7 - Copy.pdf

Your NOI for the following has been received and reviewed for completeness: City of Kalamazoo DPS-Kalamazoo River, Arcadia Creek, Axtell Creek, et al.-Kalamazoo County.

The application of tracer dyes to surface waters of the state is approved and effective immediately. Please see the attached dye test certification of approval for notification requirements (No. 5 and No. 6 on attached) and additional information. This approval is permitted through December 31, 2023.

Thanks!

Susan Ashcraft

Susan Ashcraft
Administrative Assistant
Lansing District Office
Water Resources Division, EGLE
ashcrafts@michigan.gov

REQUESTING INDIVIDUAL RULE 97 CERTIFICATION OF APPROVAL WATER RESOURCES GUIDANCE

All projects involving the application of materials to waters of the state for water resource management purposes require a Rule 97 Certification of Approval from the Michigan Department of Environment, Great Lakes and Energy (EGLE).

Rule 97 of the Michigan Water Quality Standards states:

"The application of materials for water resources management projects pursuant to state statutory provisions is not subject to the standards as prescribed by these rules, but all projects shall be reviewed and approved by the commission before application."

Water resource management projects requiring an Individual Rule 97 Certification of Approval include but are not limited to:

- application of products to surface waters of the state to control phosphorus.
- use of explosives to remove ice dams.
- application of rotenone for fish removal.

The following items must accompany any individual Rule 97 Approval request:

1. Description and purpose of the proposed water resource management project. A copy of any relevant standard operating procedures should be provided, if available.
2. Please describe any available water quality data that supports the necessity of the proposed treatment. Please state whether any water quality parameters will be monitored as part of the project. If so, please describe the monitoring regime and parameters to be measured.
3. Name and/or type of water body(ies) potentially affected by the proposed project.
4. Geographic location(s) of the specific water body(ies) potentially affected by the proposed project. The county, township/range/section data should be included to identify the affected site(s) location.
5. Name of material(s) to be applied to the water body(ies). A Safety Data Sheet and product manufacturer's label should also be included. If bacteria are being used in the treatment, all bacterial strains, other ingredients, and any trace name formulations should be listed.

6. Specific time period when the treatment will occur. It is acceptable for a single request to cover multiple treatment applications scheduled over an extended time period (e.g., ten treatments of water body(ies) planned from April to November with a spacing of three to four weeks between treatments).
7. Total load(s) and dosage concentration(s) of the materials to be applied to the water body(ies). If the proposed dosage deviates from dosage recommendations on the manufacturer's label, a brief explanation should be provided.
8. The surface area of the water body(ies) that will potentially be affected by the treatment.
9. The name and contact information for the company selling the material to the applicant.
10. Lake ownership information, whether public or private. If private, what individual, group, or company has ownership.

The requests for approval to apply materials under Rule 97 should be submitted for review to Dr. Sara Nedrich, Water Toxics Unit, Surface Water Assessment Section, Water Resources Division by email at NedrichS@Michigan.gov or by mail at:

Dr. Sara Nedrich
Michigan Department of Environment, Great Lakes, and Energy
Water Resources Division, 3rd Floor South
P.O. Box 30458
Lansing, Michigan 48909-7958

By providing the information described in items 1-10, we will be able to provide a prompt review of your request.

Please contact Dr. Nedrich at NedrichS@Michigan.gov or 517-242-4989 with any questions.

This publication is intended for guidance only and may be impacted by changes in legislation, rules, policies, and procedures adopted after the date of publication. Although this publication makes every effort to teach users how to meet applicable compliance obligations, use of this publication does not constitute the rendering of legal advice.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

To request this material in an alternate format, contact EGLE-Accessibility@Michigan.gov or 800-662-9278.



Contact List for Notification of Intent for Dye Testing
with Potential to Impact Surface Water:

NOTE: 48 hours prior to administering dye testing the following agencies must be notified:

EGLE: Susan Ashcraft ashcrafts@michigan.gov

Kalamazoo County Health Department: Lucas Pols ldpols@kalcounty.com

Kalamazoo Public Safety non-emergency: 269-488-8911, Select 1 to connect to dispatch

Also Email: supervisors@kccda911.org

COK: Wendy Burlingham: burlinghamw@kalamazoo-city.org

COK: 311

COK: Jean Talanda talanda@kalamazoo-city.org

Example Text Script for IDEP Email Notifications - Also provide general project location and dates:

Media Release

For Immediate Release

**Contacts: City of Kalamazoo Department of Public Services
Water Resources Division
269-337-8148**

DYE TESTING DOWNTOWN KALAMAZOO City of Kalamazoo's Illicit Discharge Elimination Program (IDEP)

On (date), Kalamazoo, MI – Personnel of the Kalamazoo Dept. of Public Services will be using tracer dye to assist in the implementation of the City's Illicit Discharge Elimination Program (IDEP) pursuant to its Stormwater Phase II NPDES Permit (MS4 General NPDES Permit). The State of Michigan Department of Environment, Great Lakes and Energy (EGLE) has been notified and has approved the tracer dye testing.

The purpose of the dye testing is to investigate possible illicit discharges to the City's stormwater sewer system. The dye can appear in local surface water like shown in the picture below. This can be alarming

to citizens. Since the storm sewers in the City of Kalamazoo discharge stormwater directly to local lakes, rivers and streams, the City works to protect those local water resources.

Sometimes the City will use dye testing to help eliminate plumbing connections to the stormwater sewer system that should not be connected or to investigate materials being dumped into the stormwater sewer system. The dyes are determined to be safe and approved for use. They work as a very useful tool to help eliminate potentially harmful materials from getting into our local lakes, rivers and streams:



Photo from: <https://ecology.wa.gov/Blog/Posts/April-2013/Stories-about-Getting-to-Clean-Water-Stormwater-Si>

1 Company and Substance / Formulation Identification

- **Product Identifier**
 - **Product name:** LIQUID POWDER TRACING DYE BLUE
 - **Product Code** LP6-C
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / preparation** Dyestuff/Colouring agent
- **Details of the supplier of the safety data sheet**
 - **Manufacturer/Supplier:**
Norlab, Inc.
7465 Industrial Parkway
Lorain, OH 44053
 - **Department:** Regulatory
 - **Emergency Telephone:**
1-800-247-9422

2 Hazard(s) identification

- **Classification of the substance or mixture:**
The product is not classified according to the Globally Harmonized System (GHS).
- **Label elements**
 - **GHS label elements** Void
 - **Hazard pictograms** Void
 - **Signal word** Void
 - **Hazard statements** Void
- **Additional information:** Non-classified.
- **Classification system:**
 - **NFPA ratings (scale 0 - 4)**



Health = 1
Fire = 1
Reactivity = 0

- **HMS-ratings (scale 0 - 4)**



Health = 1
Fire = 1
Reactivity = 0

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Hazardous components:** Void

4 First-aid measures

- **Description of first aid measures**
 - **General information:** No special measures required.

(Contd. on page 2)

Product name: LIQUID POWDER TRACING DYE BLUE

(Cont'd. from page 1)

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
If symptoms persist consult doctor.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
 - **Suitable extinguishing agents:**
Use fire fighting measures that suit the environment.
CO₂-extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
 - **Protective equipment:** Wear fully protective suit.
 - **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Product forms slippery surface when combined with water.
Wear protective clothing.
- **Environmental precautions:** Keep contaminated washing water and dispose of appropriately.
- **Methods and material for containment and cleaning up:**
Clean the affected area carefully; suitable cleaners are:
Warm water
- **Reference to other sections**
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**
Store in cool, dry place in tightly closed receptacles.
No special measures required.
- **Protection against explosions and fires:** No special measures required.

(Cont'd. on page 3)

Product name: LIQUID POWDER TRACING DYE BLUE

(Cont'd. from page 2)

- **Special Sensitivity:** KEEP FROM FREEZING.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
 - **Requirements for storerooms and containers:** Store only in the original receptacle.
 - **Further information about storage conditions:**
 - Protect from frost.
 - Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Technical systems:**
 - Facilities using this material should be equipped with an eye wash station and a safety shower.
- **Control parameters**
 - **Components with limit values that require monitoring at the workplace:**
 - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
 - **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
 - **Personal protective equipment:**
 - **General protective and hygienic measures:**
 - The usual precautionary measures for handling chemicals should be followed.
 - Product is a concentrated colorant and can stain skin and/or various articles. The hazards of this product should be low under normal industrial and commercial use. Handle with care to minimize exposure.
 - **Breathing equipment:** Not required.
 - **Protection of hands:**
 - Use of gloves suggested; concentrated dye/pigment products may stain skin if directly contacted.
 - **Glove Material** No specified glove material; most liquid-impervious protective gloves will suffice.
 - **Eye protection:** General eye protection suggested when handling any chemical product.
 - **Body protection:** Protective work clothing

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

- **Appearance:**
 - **Form:** Liquid
 - **Color:** Dark blue
 - **Odor:** Odorless
 - **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· Change in condition

- **Melting point/Melting range:** Undetermined.
- **Boiling point/Boiling range:** 95 °C (203 °F)

· **Flash point:** Not applicable.

(Cont'd. on page 4)

Product name: LIQUID POWDER TRACING DYE BLUE

(Cont'd. from page 3)

· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapor pressure:	Not determined.
· Density at 20 °C (68 °F):	1.16 g/cm ³ (9.68 lbs/gal)
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Soluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** Avoid contact with strong oxidizing agents.
- **Hazardous decomposition products:**
 - In the case of a fire, oxides of carbon, fumes, and smoke may be produced.

11 Toxicological information

- **Information on toxicological effects**
 - **Acute toxicity:**
 - **LD/LC50 values that are relevant for classification:**
 - Product has not been tested.
 - Based on the known information of the ingredients, product is expected to have a low level of acute oral toxicity. (Oral LD50 >2,000 mg/kg)
 - **Primary irritant effect:**
 - **on the skin:** No irritant effect.
 - **on the eye:** No irritating effect.
 - **Sensitization:** No sensitizing effects known.
 - **Additional toxicological information:**
 - The product is not subject to classification according to internally approved calculation methods for preparations.
 - When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

(Cont'd. on page 5)

Product name: LIQUID POWDER TRACING DYE BLUE

(Cont'd. from page 4)

Carcinogenic categories:

IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability: The product is biodegradable after prolonged adaptation.

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Additional ecological information:

Other adverse effects: No further relevant information available.

13 Disposal considerations

Waste treatment methods:

Recommendation: Must be specially treated adhering to official regulations.

Uncleaned packagings:

Recommendation: Packaging can be reused or recycled after cleaning.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

UN-Number

DOT, ADR, ADN, IMDG, IATA Void

UN proper shipping name

DOT, ADR, ADN, IMDG, IATA Void

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class Void

Packing group

DOT, ADR, IMDG, IATA Void

Environmental hazards: Not applicable.

Special precautions for user: Not applicable.

UN "Model Regulation": -

Product name: LIQUID POWDER TRACING DYE BLUE

(Contd. from page 5)

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Proposition 65

Chemicals known to cause cancer: No known Proposition 65 substances.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

GHS label elements Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

16 Other information

The data in this Material Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process. This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of the manufacturer/supplier. The data on this sheet are related only to the specific material designated herein, and the information available for all ingredients at the time of creation. Manufacturer/supplier assumes no responsibility for use or reliance upon these data. Any information that is withheld herein (such as exact chemical identity or exact concentration) has been reserved as a trade secret as per applicable regulations.

UIC

1 Company and Substance / Formulation Identification

Product Identifier

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

Product Code LPY-C

Relevant identified uses of the substance or mixture and uses advised against

No further relevant information available.

Sector of Use SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

Application of the substance / preparation Dyestuff/Colouring agent

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Norlab Inc.

7465 Industrial Parkway

Lorain, Ohio 44053 USA

(800) 247-9422

Department: Regulatory

Emergency Telephone:

1-800-247-9422

2 Hazards Identification

Classification of the substance or mixture

The product is not classified according to the Globally Harmonized System (GHS).

Label elements

GHS label elements Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

Classification system:

NFPA ratings (scale 0 - 4)



Health = 1

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 1

Fire = 0

Reactivity = 0

Other hazards Personal Protection Index: B

3 Composition/Information on Ingredients

Chemical characterization: Mixtures

Description: Mixture of the substances listed below with nonhazardous additions.

Hazardous components: Void

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

4 First-aid measures

(Contd. from page 1)

Description of first aid measures

- General information: No special measures required.
- After inhalation: Supply fresh air, consult doctor in case of complaints.
- After skin contact:
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- After eye contact:
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing:
Rinse out mouth and then drink plenty of water.
Seek immediate medical advice.
- Information for doctor:
Most important symptoms and effects, both acute and delayed
No further relevant information available.
- Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures

- Extinguishing media
 - Suitable extinguishing agents:
Use fire fighting measures that suit the environment.
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- Special hazards arising from the substance or mixture
Formation of toxic gases is possible during heating or in case of fire.
- Advice for firefighters
 - Protective equipment: Wear fully protective suit.
 - Additional information
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
Product forms slippery surface when combined with water.
Wear protective clothing.
- Environmental precautions:
Material is approved for controlled release for certain water tracing applications.
Refer to any and all applicable state or municipal regulations to determine tracer study requirements.
- Methods and material for containment and cleaning up:
Clean the affected area carefully; suitable cleaners are:
Warm water
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- Reference to other sections
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

See Section 13 for disposal information.

(Cont'd. from page 2)

7 Handling and storage

Handling:

Precautions for safe handling

Store in cool, dry place in tightly closed receptacles.
No special measures required.

Protection against explosions and fires: No special measures required.

Special Sensitivity: KEEP FROM FREEZING.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements for storerooms and containers: Store only in the original receptacle.

Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.

Specific end use(s): No further relevant information available.

8 Exposure controls/personal protection

Technical systems:

Facilities using this material should be equipped with an eye wash station and a safety shower.

Control parameters

Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.
Product is a concentrated colorant and can stain skin and/or various articles. The hazards of this product should be low under normal industrial and commercial use. Handle with care to minimize exposure.

Breathing equipment: Use suitable respiratory protective device in case of insufficient ventilation.

Protection of hands:

Use of gloves suggested; concentrated dye/pigment products may stain skin if directly contacted.

Glove Material: No specified glove material; most liquid-impervious protective gloves will suffice.

Eye protection: General eye protection suggested when handling any chemical product.

Body protection: Protective work clothing

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid

Color: Dark yellow

Odor: Odorless

Odour threshold: Not determined

pH-value at 20°C (68 °F): 8.5 - 11.0

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

(Cont'd. from page 3)

· Change in condition	
· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	Undetermined.
· Flash point:	Not applicable.
· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Vapor pressure:	Not determined.
· Density at 20°C (68 °F):	1.27 g/cm ³ (10.598 lbs/gal)
· Relative density	Not determined.
· Solubility in / Miscibility with	
· Water:	Soluble.
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
 - **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:**
In the case of a fire, oxides of carbon, fumes, and smoke may be produced.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
 - **LD/LC50 values that are relevant for classification:**
Based on the known information of the ingredients, product is expected to have a low level of acute oral toxicity. (Oral LD50 >2,000 mg/kg)
 - **Primary irritant effect:**
 - **on the skin:** Contact may cause irritation.
 - **on the eye:** Contact may cause irritation.
 - **Sensitization:** No sensitizing effects known.

USA

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

(Cont'd. from page 4)

Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability: No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Additional ecological information:

General notes:

Not known to be hazardous to water.

Other adverse effects: No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation: Must be specially treated adhering to official regulations.

Uncleaned packagings:

Recommendation: Packaging can be reused or recycled after cleaning.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

UN-Number

DOT, ADR, IMDG, IATA Void

UN proper shipping name

DOT, ADR, IMDG, IATA Void

Transport hazard class(es)

DOT, ADR, IMDG, IATA
Class Void

Packing group

DOT, ADR, IMDG, IATA Void

Special precautions for user Not applicable.

UN "Model Regulation": -

-1/4-

Product name: LIQUID POWDER TRACING DYE YELLOWGREEN

(Cont'd. from page 5)

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA

Section 355 (extremely hazardous substances):

None of the ingredients is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

OSHA (Occupational Safety & Health Administration)

None of the ingredients is listed.

GHS label elements Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

16 Other information

The data in this Material Safety Data Sheet relates only to the specific material designated herein. It does not relate to use in combination with any other material or in any process. This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of the manufacturer/supplier.

The data on this sheet are related only to the specific material designated herein, and the information available for all ingredients at the time of creation. Manufacturer/supplier assumes no responsibility for use or reliance upon these data. Any information that is withheld herein (such as exact chemical identity or exact concentration) has been reserved as a trade secret as per applicable regulations.



Annual Inspection Report
Horizontal Flow In-Line Stormwater Treatment Unit

Inspections to be performed and reported annually. Reports are due Nov 1st.

Inspection Date: _____

Inspector's Name: _____

Title: _____

Company Performing Inspection (if performed by off-site company): _____

Treatment Unit Site Information

Business Name: _____ Site Address: _____

Contact Person: _____ Title: _____

Phone Number: _____ Fax Number: _____

Email Address: _____

Manufacturer & Model of Treatment Unit(s) Installed: _____

Number of Treatment Units Installed / Inspected: _____

Observed Condition of Treatment Unit(s)

The depth of oil and sediment in the unit can be measured from the ground surface.

Sediment

Less than 1 inch of sediment on bottom

1 to 7 inches of sediment on bottom

More than 7 inches of sediment on bottom

Oil

No oil on water surface

Oil sheen on water surface

More than 1/8 inch of oil on water surface

Generally, annual maintenance is recommended but the required maintenance frequency will vary with the amount of pollution on your site (number of hydrocarbon spills, amount of sediment, etc.). It is recommended that the frequency of maintenance be increased or reduced based on local conditions. Maintenance should be performed immediately after an oil spill or once the sediment depth reaches the values specified in your unit manufacturer's maintenance specifications. Maintenance of these units is performed from the surface via vacuum truck. These units must be maintained to ensure long-term environmental protection through continual performance.

Maintenance / Repair Needed on Treatment Unit(s)

No repair or maintenance needed at this time

Vacuuming of pits and/or sediment needed

Unit is **not** functioning properly and needs to be repaired.

Item(s) needing repair: _____

Maintenance / Repair Performed on Treatment Unit(s)

Oil and/or sediment has been vacuumed out of unit

Necessary repairs have been made

Necessary Repairs have not been made but are scheduled to be completed

Comments:

Please Email this report to: Environmental Support Specialist, drusts@kalamazoo.org

For Questions, contact: Environmental Support Specialist, 269-337-8343

Please contact the manufacturer or supplier of your stormwater treatment unit for detailed instructions on maintenance of your particular model.

APPENDIX G - VISUAL ASSESSMENT PROCEDURES & REPORTING FORM

1. List the discharge point(s) (as indicated on the SWPPP map):
North Outfall
South Outfall
 - a) Is there substantially identical discharge points? Yes No
If "Yes" then complete a) and b) below, if "No" go to Number 2.
 - b) Describe the justification for the substantially identical discharge points determination? **NA**
 - c) List the schedule for alternating the substantially identical discharge points: **NA**
2. Describe the monitoring (sampling) location for each discharge point:
North Outfall sampling location: Aqua Swirl outlet
South Outfall sampling location: Manhole immediately upgradient of South Outfall
3. List the Qualified Personnel that will collect the water sample:
Tom Palumbo
4. Training for the Qualified Personnel includes viewing the Visual Assessment Webinar and/or the 3 Visual Assessment Tutorials on the EGLE, WRD Industrial Storm Water webpage. Check the appropriate box below:
 Yes
 No, however a copy of the training materials used are included with this procedure.
5. List the sampling equipment used for the collecting the water sample(s):
Two 1 Liter Nalgene bottles
6. Complete a) through c) below to describe the storm event information.
 - a) Describe how qualifying storm events are determined (including nature of the event):
A qualifying storm event is defined as 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
 - b) Describe how each discharge point was evaluated to determine when a discharge would begin:
Sampling will take place at the discharge point within the first 30 minutes of the start of a discharge resulting from a qualifying storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample shall be collected as soon thereafter as possible.
 - c) Describe what would constitute an adverse weather condition that would prevent sample collection:
Conditions which are dangerous or create inaccessibility for personnel, such as local flooding, high winds, electrical storms, or situations that otherwise make sampling impractical (drought, extended frozen conditions, etc.)
7. Describe how the samples will be collected (Determine the timing sequence for water sample collection from the discharge points): **The samples will be collected from the South Outfall followed by the North Outfall.**

8. Describe the water sampling instructions that the Qualified Personnel will follow: **The Certified Operator will follow instructions as outlined by "Instructions for Completing the Quarterly Visual Assessment Report- Visual Assessment Sample Information" to perform the water sampling.**
9. Describe how observations made by the Qualified Personnel will be documented during the discharge (include nature of the event): **Observations made by the Qualified Personnel will be documented using the Visual Assessment form in Appendix G.**
10. Describe the sample storage procedures if applicable: **Sample will be stored between 2 and 6 degrees Celsius for no longer than 48 hours.**
11. Describe the procedures the Industrial Storm Water Certified Operator will follow to perform the visual assessment(s) of the water sample(s): **The Certified Operator will follow instructions as outlined by "Instructions for Completing the Quarterly Visual Assessment Report- Visual Assessment Sample Information" to perform the visual assessment.**
12. List the name(s) of the Industrial Storm Water Certified Operator who will be performing the water sample visual assessment(s): **Tom Palumbo**
13. The EGLE, WRD Visual Assessment Report form should be used to document each water sample visual assessment. Check the appropriate box below:
 - Yes, the EGLE, WRD Visual Assessment Report form is used.
 - No, the EGLE, WRD Visual Assessment Report form is not used however the form being used to meet this requirement is included with this procedure.
14. Colored Photos shall be used to record the visual assessment(s). If other methods of recording observations will be used describe those methods: **Lucity Visual Assessment form and notes.**
15. All visual assessment documentation should be kept with the SWPPP file. If documentation will be kept at an alternate location state that location: **Documentation will also be kept in the Lucity system.**
16. Describe the follow-up actions that will be taken if unusual characteristics are observed during the visual assessment(s): **Depending on the unusual characteristics, the following actions may be taken: routine site inspection of all use and storage areas, structural control inspection of AquaSwirl manufactured treatment device, catch basin and inlet inspections, street sweeping of all paved areas.**

Visual Assessment Sample Information		
Facility Name:	COC No. <u>or</u> NPDES Permit No:	
Industrial Storm Water Certified Operator Name:		
Name / Title of person collecting sample if other than Cert. Operator:		
Date of Comprehensive Inspection:	Is this a substitute sample? <input type="checkbox"/> No <input type="checkbox"/> Yes Explain:	
Discharge Point # / Name:	Substantially Identical Discharge Point? <input type="checkbox"/> No <input type="checkbox"/> Yes List:	
Description of sample collection location:		
Date / Time Discharge Began:	Date / Time Sample Collected:	Date / Time Sample Examined:
For rain events - if sample was collected > 30 minutes from start of discharge, provide explanation:		
Snowmelt <input type="checkbox"/>	Rainfall <input type="checkbox"/> Inches:	If rain event - previous storm ended > 72 hours prior to start of this event? <input type="checkbox"/> No <input type="checkbox"/> Yes

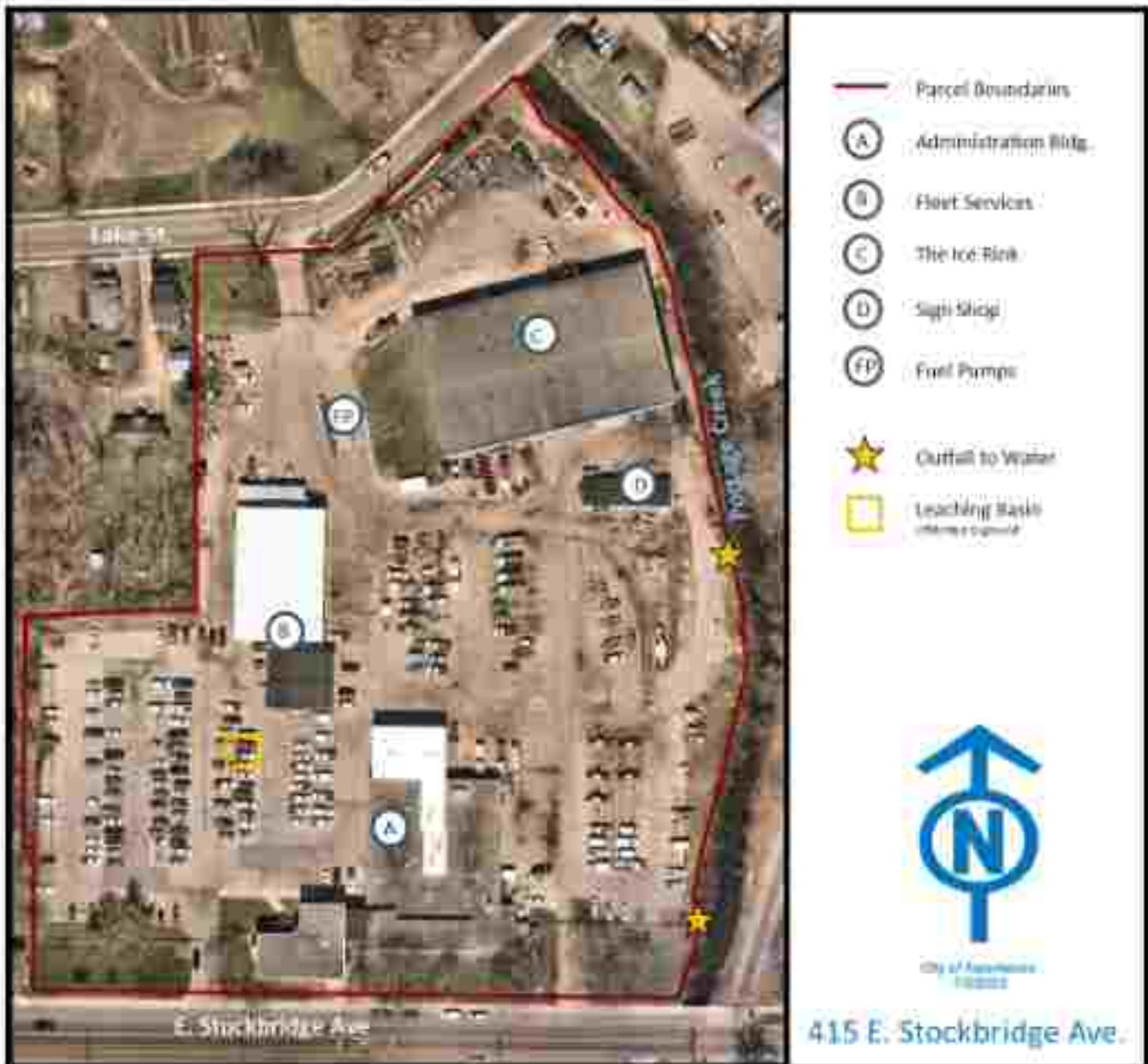
Observations	
Color: <input type="checkbox"/> None <input type="checkbox"/> Yes (describe):	Floating Solids: <input type="checkbox"/> No <input type="checkbox"/> Yes (describe):
Oil Films / Sheens: <input type="checkbox"/> None <input type="checkbox"/> Flecks <input type="checkbox"/> Globs <input type="checkbox"/> Sheen <input type="checkbox"/> Other Describe appearance of film/sheen:	
Foam (gently shake sample): <input type="checkbox"/> No <input type="checkbox"/> Yes	Suspended Solids: <input type="checkbox"/> No <input type="checkbox"/> Yes (describe):
Settleable Solids: <input type="checkbox"/> No <input type="checkbox"/> Yes (describe):	
Odor: <input type="checkbox"/> None <input type="checkbox"/> Musty <input type="checkbox"/> Sewage <input type="checkbox"/> Sulfur <input type="checkbox"/> Sour <input type="checkbox"/> Hydrocarbons <input type="checkbox"/> Chemical <input type="checkbox"/> Other (describe):	
Turbidity/Clarity: <input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Cloudy <input type="checkbox"/> Milky <input type="checkbox"/> Other (describe):	
Picture of sample taken (required): <input type="checkbox"/> No <input type="checkbox"/> Yes Storage location:	
Receiving waters observed? <input type="checkbox"/> N/A <input type="checkbox"/> No <input type="checkbox"/> Yes (describe):	

Follow-up:
Based on the visual observation, are there unnatural characteristics in the discharge (cloudiness, color, sheen, etc.)? <input type="checkbox"/> No <input type="checkbox"/> Yes
Potential sources of observed unnatural characteristics <input type="checkbox"/> N/A <u>or</u> describe:
Implemented / recommended corrective action(s) <input type="checkbox"/> N/A <u>or</u> describe: Scheduled date for correction:

I certify that the above information is correct	
Certified Operator Signature	Date

FIGURES

FIGURE 1 - GENERAL SITE MAP AND PHOTOS



Site Map Notes:

- Building A is comprised of administration offices, breakroom/lunch room, a stockroom, water and streets shop area, and a car wash bay.
- Building B is fleet services and is used to service City vehicles. The North end is for city fleet and oil storage and the south end is for Public Safety vehicle service.
- Building C is referred to as "The Ice Rink"; this building is used for spreader truck parking, storage, and asphalt material.
- Building D is referred to as "The Sign Shop"; this building is used for storage for streets maintenance.

Diesel Fuel Pump at Stockbridge Fueling Station



Gasoline Fuel Pump at Stockbridge Fueling Station



Bio Diesel Fuel Pump at Stockbridge Fueling Station



All fuel pumps have auto shut off nozzles and are equipped with a break-away device to prevent fuel from escaping in the event the nozzle becomes disconnected from the hose.



Fuel Station spill kit directly West of fuel pumps.



Fleet Services Exterior Spill kit located at the Southwest corner of building. Spill kit is positioned outside the overhead door of the oil room.



Propane Storage West of Fleet Services Building.



Oxygen, Acetylene, and Argon tanks stored Southwest of the Fleet Services Building. Cage is locked for safety.

All tanks will be stored with the lid pointed upwards.



Metal Recycling Bin South of Fueling Station (see Figure 2). Area is covered to prevent seepage from rainwater.



Aqua- Swirl immediately west of the North Outfall at Portage Creek.

FIGURE 2 - SIGNIFICANT MATERIAL USE AND STORAGE MAP



Site Map Notes:

- All dumpsters are covered with lids.
- Metal Recycling bins have a pulley roof system.

FIGURE 3- STORM STRUCTURE AND DRAINAGE AREA MAP

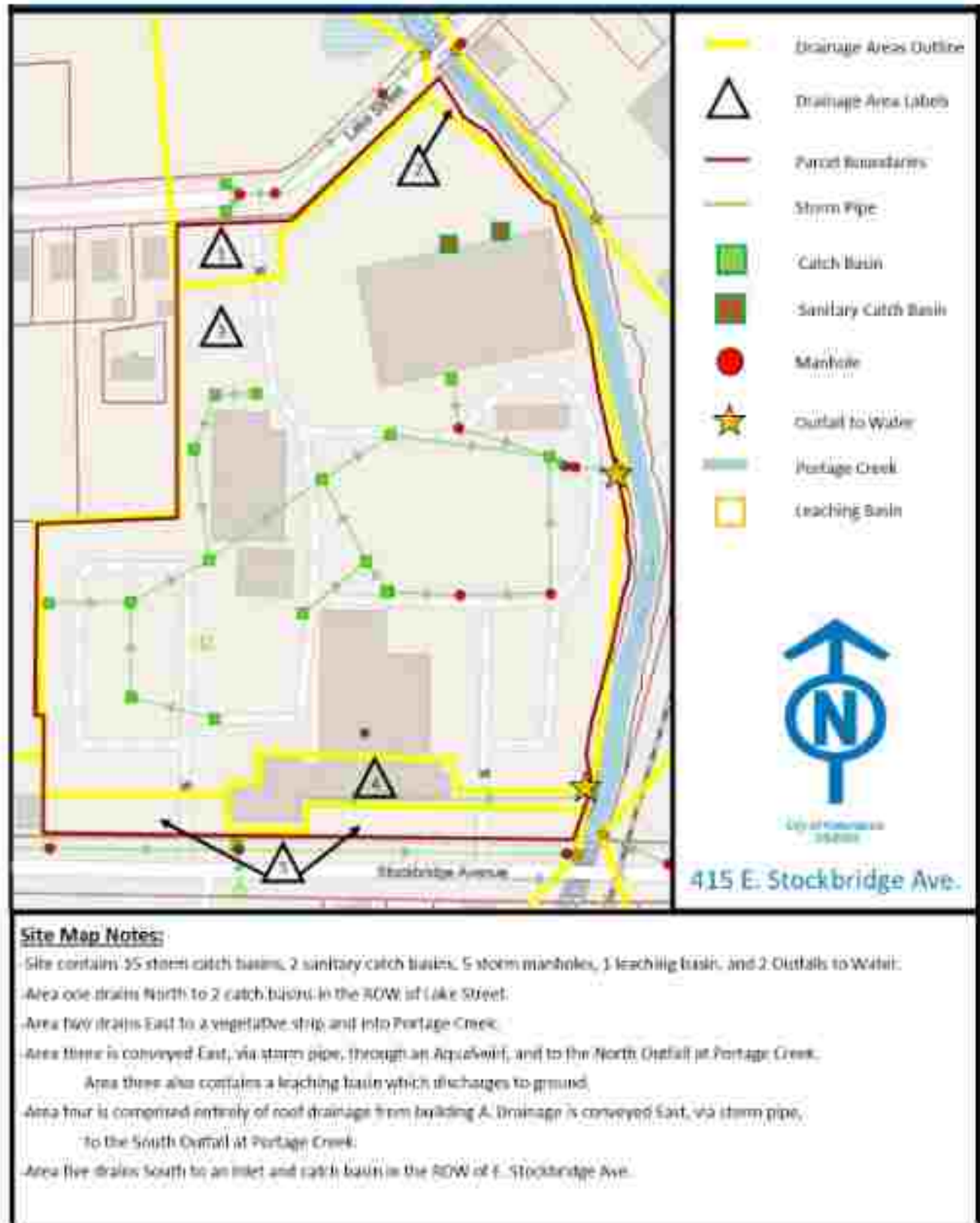
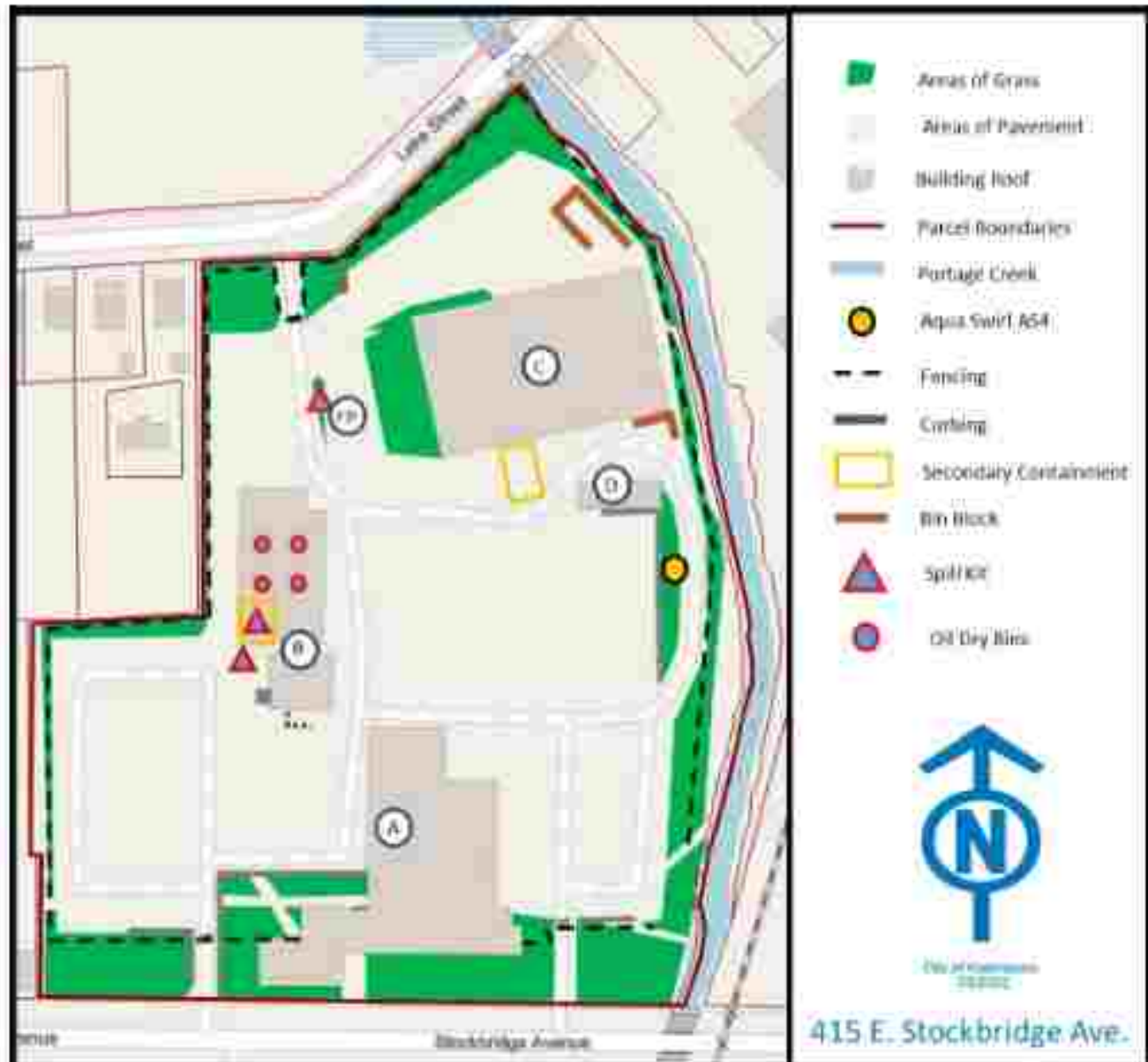


FIGURE 4- VEGETATION AND STRUCTURAL CONTROLS MAP



Site Map Notes:

- Site is primarily paved road and parking area. There are thin areas of grass around the parcel boundary and wider grass areas adjacent to Stockbridge Ave and Lake Street. Small amounts of curbing exist throughout the site.
- Site is surrounded entirely by fencing with 3 gates. Two off of Stockbridge Avenue and one off of Lake Street.
- Structural Controls that exist on site are: Aqua Swirl ASA manufactured treatment device, bin blocks to contain waste asphalt and sediment around Building C, and secondary containment for the oil storage room as well as sloped secondary containment on the South side of Building C for the dumpsters.
- Spill kits are located in the Fuel Pump area, the oil storage room in Building B, and outside of Building B near the empty oil drum storage. Four oil dry bins are located inside the Fleet Services shop in Building B.

TABLES

TABLE 1 - SIGNIFICANT MATERIALS INVENTORY

SIGNIFICANT MATERIAL	STORAGE CAPACITY	QUANTITY ON SITE 11-25-21	QUANTITY USED LAST 12 MONTHS
Waste Oil	300 gallons	100 gallons	2015 gallons
Global antifreeze	65 gallons	48 gallons	220 gallons
Permanent antifreeze	65 gallons	93 gallons	110 gallons
2 Cycle Oil	Quarts as needed	12 quarts	20 gallons
Universal Tractor fluid	65 gallons	40 gallons	55 gallons
Diesel fuel	65 gallons	56 gallons	
Tellis T-22	65 gallons	13 gallons	
Dynalife L-EP	3 x 5-gallon pails	15 gallons	
Rotella T sea 10 w motor oil	1 x 5-gallon pails	5 gallons	
Donax TD Fluid	1 x 5-gallon pails	5 gallons	
Mobil Grease X 4 P 222	1 x 5-gallon pails	5 gallons	
Mobil lux EPI	1 x 5-gallon pails	5 gallons	
JCB Special gear oil plus	3 x 5-gallon pails	15 gallons	
Non - Chlorinated brake cleaner	36 x 19-ounce cans	36 19-ounce cans	55 gallons
Waste antifreeze	55-gallon drum	45 gallons	
15w40 ci4 oil	55-gallon drum	55 gallons	110 gallons
Hvd oil 10 weight	500 gallons	400 gallons	500 gallons
Tellis T 68 oil	55-gallon drum	45 gallons	
85-140 Gear oil	2 x 55-gallon drum	97 gallons	
Wolf head synthetic ATF	55-gallon drum	40 gallons	100 gallons
15w40 motor oil	500 gallons	350 gallons	1144 gallons
Chevron grease	55-gallon drum	55 gallons	

TABLE 2 - EXPOSED SIGNIFICANT MATERIALS INVENTORY

SIGNIFICANT MATERIAL	STORAGE CAPACITY	QUANTITY ON SITE	QUANTITY USED LAST 12 MONTHS
Waste hot mix asphalt (HMA)	10 cubic yards	10 cubic yards	N/A
Excavation Spoils	15 cubic yards	variable	N/A

TABLE 3 - SIGNIFICANT MATERIAL INVENTORY AND DESCRIPTION OF INDUSTRIAL ACTIVITY OR SIGNIFICANT MATERIAL STORAGE AREAS

Section Listed in General Permit	Storage Areas / Activity Areas	Significant Materials	Exposure Method	Reasonable Potential Evaluation	Inlet(s)	Outfalls(s)
1) Loading, unloading, and other material handling operations	Underground fuel storage tanks	(1) 6,000-gallon diesel fuel (2) 6,000-gallon gasoline	Spills	Low	Two CBs upgradient from AquaSwirl Unit	STOWKC223626
	Fuel pumps	Diesel fuel and unleaded gasoline	Spills	Medium	Two CBs upgradient from Aqua Swirl Unit	STOWKC223626
	Top dirt, sand and gravel storage areas	Soil, sand and gravel	Direct runoff	Medium	None	None
	Indoor storage area in maintenance garage	Waste oil, antifreeze, mineral spirits, motor oil, tractor fluid, diesel fuel, transmission fluid, grease, gear box oil, brake cleaner	Leaks and spills	High		STOWKC223626
2) Outdoor storage including secondary containment structures	Underground fuel storage tanks	(1) 6,000-gallon diesel fuel (2) 6,000-gallon gasoline	Leaks	Low	Two inlets upgradient from AquaSwirl Unit	STOWKC223626
	Top dirt, sand, and gravel storage	Soil, sand, and gravel	Direct runoff	Medium	None	None
	Recycling dumpsters, misc. equipment and parts storage, tree trimming piles, back-up generator	General refuse, grease, hydraulic fluids, hydraulic oil, oil, coolant, grey water, scrap metal, diesel	Leaks - primarily direct runoff	Low	Inlets upgradient from AquaSwirl Unit	STOWKC223626
	Asphalt storage (minimal)	Asphalt	Direct runoff	Low	None	None

Section Listed in General Permit	Storage Areas / Activity Areas	Significant Materials	Exposure Method	Reasonable Potential Evaluation (High, Medium, Low)
3) Outdoor manufacturing or processing activities	None			
4) Significant dust or particulate generating processes	None			
5) Discharge from vents, stacks, and air emission controls	None			
6) On-site waste disposal practices	None			
7) Maintenance and cleaning of vehicles, machines, and equipment	Maintenance garage (inside)	Waste oil, antifreeze, mineral spirits, motor oil, tractor fluid, diesel fuel, transmission fluid, grease, gear box oil, brake	Spills, leaks	Medium
	Truck wash	Vehicle dirt and associated materials	Direct runoff	Low (runoff is designed to flow to sanitary inlets)
8) Areas of exposed and/or erodible soils	Top dirt, sand, and gravel storage	Soil, sand, and gravel	Direct runoff	Medium
9) Sites of Environmental Contamination listed • under Part 201	None			
10) Areas of significant material residues	None			
11) Areas where animals congregate (wild or domestic) and deposit wastes	None			
12) Other areas where storm water may contact significant materials	None			

TABLE 4 - STORMWATER POLLUTION PREVENTION PLAN ACTION MATRIX

ACTIVITY	FREQUENCY	REFERENCE	COMMENTS
<i>Routine Site Inspections</i>	<i>Monthly</i>	<i>Sections 5.1 through 5.2</i>	<i>Use Lucity Form Appendix D. Document and correct deficiencies immediately.</i>
<i>Comprehensive Site Inspections and Stormwater Visual Assessments</i>	<i>Quarterly</i>	<i>Sections 5.3</i>	<i>Use Appendix F and G Forms to document comprehensive inspections and visual assessments. See Appendix D for further information.</i>
<i>Non-Stormwater Inspection and Certification</i>	<i>Annually (During Dry Weather period with 72 hours minimum of no precipitation)</i>	<i>Section 7.0</i>	<i>Presence of unauthorized non-stormwater discharges will be certified by the Environmental Services Technicians.</i>
<i>Aqua Swirl AS4 Inspection</i>	<i>Annually</i>		<i>Use Appendix E Vertical Treatment Device Inspection Form.</i>
<i>SWPPP Review and Evaluation</i>	<i>Annually</i>	<i>Sections 1.3 and 8.0</i>	<i>Use Appendix A Form for SWPPP Evaluation. Document and correct deficiencies in the SWPPP in accordance with Section 8.</i>
<i>Employee Training</i>	<i>Annually</i>	<i>Section 5.6</i>	<i>Include stormwater management topic in training session. Training Sign-in Sheets can be found in Appendix H.</i>
<i>Stormwater Pollution Prevention Committee Meetings</i>	<i>Annually</i>	<i>Sections 8.0 through 9.0</i>	<i>Document meetings.</i>
<i>SWPPP Amendment</i>	<i>As Needed</i>	<i>Section 1.3 and 8.0</i>	<i>Amendment to be approved by Stormwater Pollution Prevention Committee.</i>
<i>Permit Renewal</i>	<i>Every 4 years</i>	<i>Section 1.0</i>	<i>MS4 permit, will be submitted to EGLE by the Environmental Programs Manager</i>
<i>Notice of Termination</i>	<i>Upon closure or sale of facility or cessation of stormwater discharges.</i>	<i>Section 1.3</i>	<i>Use Notice of Termination form available from EGLE.</i>

TABLE 5- SPILL KIT INVENTORY

List the spill response equipment that will be maintained in each location or locker (refer to SDSs to determine recommended clean-up methods and supplies):

Person responsible for maintaining this inventory: **Tom Palumbo**

Locker number or location	Absorbents (pads, booms, kitty litter, etc.)	Tools (shovels, brooms, squeegees, etc.)	Personal Protective Equipment (rubber gloves, boots, masks, etc.)	Other Supplies (warning tape, labels, markers, SDSs, etc.)
Fuel Pump Area	Oil dry, storm drain cover	Non-sparking shovel, broom, fire extinguisher	Nitrile gloves, safety glasses	Caution tape
Oil Storage Room	Oil dry, storm drain cover	Non-sparking shovel, broom, fire extinguisher	Nitrile gloves, safety glasses	Caution tape

Label each spill kit with the words "SPILL KIT"

The necessary emergency telephone number(s) of persons to be contacted in case of a spill or leak that is beyond the training and equipment available can be found in the 2022 Public Services Spill Response Packet.

Facility Responsible Person/Phone Number: **Tom Palumbo 269-337-8697**

Spill Response Contractor (if any)/Phone Number: **Taplin Group 269-375-9595; Daytime Chad 269-370-8918; Night Stephanie 269-366-5257**
Notify Jean Talanda (City) day/night at 269-370-1939 if Taplin is called to respond to an incident.

EGLE District Office Phone Number: **Donovan Thomas 269-615-4451**

EGLE 24-Hour Emergency Spill Reporting Hot-Line: **1-800-292-4706 (PEAS Number)**

Stencil the following warning on each spill kit:

**"WARNING: NEVER HOSE DOWN A SPILL!
 CLEAN IT UP PROMPTLY AND DISPOSE OF THE WASTE PROPERLY!"**

Section 9: Attachment D

City of Kalamazoo Catch Basin Cleaning Plan



City of Kalamazoo Catch Basin Cleaning Plan (Revised 2022)

Introduction

Catch basins allow stormwater runoff to enter the MS4 and are generally configured with a sump intended to retain sediment, prevent clogs in the MS4, and protect water quality for receiving waters. Older catch basins may not have a sump. To function properly, catch basins require routine preventative maintenance when sediment levels reach approximately 1/3 to 1/2 sediment accumulation in the catch basin sump. Routine Preventative maintenance to prevent clogging, helps reduce the impacts of water surcharge events; reduces the loading of solids, bacteria, and some pollutants to receiving waters. However, catch basin cleaning is limited on its ability to prevent all nutrients such as Phosphorous, from impacting receiving waters.

This plan is written pursuant to the United States Environmental Protection Agency's (EPA) National Pollutant Discharge Eliminations Systems (NPDES) permit requirements for stormwater discharges from the City of Kalamazoo MS4. This plan was written to include the implementation of Lucity asset management software for the City's MS4.

The City plans to strategically provide operations and management of the MS4 in accordance with EGLE and EPA catch basin cleaning guidance to the Maximum Extent Practicable as required by the permit.

Maximum extent practicable or "MEP" means the technology-based discharge standard for municipal separate storm sewer systems established by CWA § 402(p). MEP is achieved, in part, by selecting and implementing effective structural and nonstructural best management practices (BMPs) and rejecting ineffective BMPs and replacing them with effective BMPs. MEP is an iterative standard, which evolves over time as urban runoff management knowledge increases. As such, the operator's MS4 program must continually be assessed and modified to incorporate improved programs, control measures, BMPs, etc., to attain compliance with water quality standards. In the City of Kalamazoo, future development and redevelopment plans go through a Site Plan Review process that requires stormwater conditions and related structures at each site be in compliance with the 2022 "Performance Standards for Groundwater Protection within Wellhead Protection Capture Zones and Stormwater Management".

There are 11,553 catch basin and inlet structures included in the City's MS4. The catch basin inspection and cleaning will be tracked using Lucity asset management software. Structures identified as requiring preventative maintenance cleaning, those which discharge to a surface water, will then be cleaned using a non-regenerative vactor truck. The inspection documentation for catch basins is currently being tracked in Lucity. Based on existing data, the City estimates approximately 3335 catch basins qualify for preventative maintenance cleaning. This estimate will be updated as additional information on the storm sewer system is obtained during inspections. Inspections will be primarily conducted using the State's required method, a rod with distance marking, except when not applicable or feasible. Other methods may be employed based on citizen complaints, accessibility, observations of clogged structures and lack of function.

Scheduling will be based on availability of staffing and resources to the extent practicable, reasonable and attainable. The City of Kalamazoo assigns one vactor truck to the catch basin cleaning plan. However, the assigned vactor truck will also have to respond to various high priority contingencies, for example emergency water main breaks. The Public Works Supervisor will assign work locations strategically moving through 10 maintenance sections defined in the City that are also used for street sweeping and snow plowing assignments. To the maximum extent practicable, the Public Works Supervisor will prioritize catch basins for maintenance based on need (how frequently they fill), opportunity (the vactor truck is operable and available), storm conveyance issues (a section of the system has low function), need for repair, field staffing, season, funding, condition risk assessments, etc. Those

determined to be higher in priority will be cleaned more frequently based on the annual schedule determined by the Public Works Supervisor.

Through best management practices, the City utilizes Elgin Pelican mechanical street sweepers to mitigate accumulations of sediment, debris, and organic matter from entering the MS4. Scheduled street sweeping will take place during the months of May to mid-October. The current schedule of street sweeping is monthly for the "downtown" area, approximately defined as Section 1 on the attached map titled "*City of Kalamazoo Maintenance Sections for Street Sweeping and Snow Plowing*." The downtown is a business district and sweeping is more difficult due to high traffic and street parking. Sweeping is accomplished downtown by moving staff to the night shift once per week to cover the total section. The remaining portions of the City (Sections 2 through 10) are swept more frequently, approximately every 2-3 weeks based on the size of the district. Regardless of the priority designation of roads (primary, secondary and tertiary) on the map included as Section 9, Attachment G, all roads in each section are swept. Streets will also be swept in coordination with the fall leaf pick-up schedule, and intermittently during the winter, weather permitting and at the discretion of the Public Works Supervisor.

In cooperation with the catch basin inspection program, as the sweeper operators move through street segments, they will actively conduct visual assessments of the condition of storm sewer catch basins and inlets from inside the vehicle. Operators will record and report any damaged or plugged assets to the Public Works Supervisor. Catch basin cleaning work orders will be written for these assets and they will be prioritized in the cleaning schedule.

Procedures for Asset Inspection

- Implement appropriate traffic safety procedures prior to each catch basin inspection and cleaning procedure.
- Visually inspect the catch basin to determine cleaning needs.
 - Complete the catch basin inspection document in Lucity.
- Once structures have undergone inspection, a crew and vactor truck will clean structures that meet maintenance cleaning requirements. It is recommended to begin cleaning with upstream structures, beginning with locally upstream structures when starting in an area. Drainage areas can be viewed in Lucity and GIS maps and include all structures that drain to a single outfall structure.
- Clean debris off the grate.
- Remove grate.
- Clean the catch basin using a high-pressure washer, while capturing sediment slurry with a vacuum.
- If sediment has entered the discharge pipe, clean the pipe and any other downstream structures impacted by sediment and debris.
- Associate all structures (catch basin, inlet, conduit, manhole, etc.) cleaned as part of this process with the work order in Lucity.

Handling and Disposal of Catch Basin Cleanings

- The by-product is brought to and disposed of at the Kalamazoo Water Reclamation Plant (KWRP), 1415 N. Harrison Street Facility.
- The solids are separated and placed on a contained drying bed where they are prepared for landfill disposal.

Record Keeping

- All catch basin inspections will be documented in Lucity.
- All work done associated with the catch basin cleaning program will be documented in Lucity.
- Complete waste disposal form located at the KWRP when disposing of by-product from catch basin cleaning.

Resources:

[EJLE Catch Basin Cleaning Activities Guidance \(2021\)](#)

https://www.michigan.gov/documents/deq/wrd-stormwater-catch-basin-guidance_579858_7.pdf

[EPA Storm Water O&M Fact Sheet Catch Basin Cleaning](#)

<https://nepis.epa.gov/Exec/Display/NET.exe/200044BA.txt?zActionD=zDocument&Client=EPA&Index=1995%20Thru%201998&Docs=&Query=&Time=&EndTime=&SearchMethod=1&ToC=&ToCEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5C%20%5C%20INDEX%20DATA%5C%2095THRU99%5C%20%5C%200000015%5C%200044BA.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C=&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=Hofr&DefSeekPage=x&SearchBack=zActionL&Back=zActionS&BackDesc=Results%20page&MaximumPage=1&zEntry:1>

Examples of the City's Lucity-generated inspection and maintenance forms and service work orders are provided on the following pages.

[Catch Basin Inspection Form Example](#)

Catch Basin Inspection Form Example



GENERAL INFORMATION

Structure # **ST25AFC** Date Inspected **12/20/23** Time Inspected **1:01 PM** Next Inspection Date **3/30/25**

Created By **PH** Storm Report is pending

Inspection Purpose **1 - CO - Routine Evaluation** Inspection Method **1 - Surface**

Weather **11 - Clear**

Cleaning Method **1 - Surface Cleaned**

Overall Condition **7 - Good** Debris Type **1 - Sludge** Sump Sediment Level **1 - None to Minimal**

Safety Issues? **0 - No**

Wet Weather Hotspot Stormwater Marker Flashed/Confirmed

Suspected Inlet Discharge Evident

Maintenance Requested # of Work Order Created **0**

General Comment
12/27 CO Inspection

Preventative Maintenance Work Order Example

ASSET MANAGEMENT
Home
Stormwater WO
Kazoo_Storm_WO_Form

Work Order #
0102 00000

Status
000 Complete

Status Date **Status Time**
5/8/2022 10:00 AM

Asset Type **Simple WO Asset Rec #**
Storm Structure STWACTOR

Category
Type: Storm Structure Document Available

Problem
000000 Preventative Maintenance

Main Task
000000 Close

Address **Street Name**

Work Order

Comments From Request

Cause

Assigned By	Start Date	Assigned Time
10401 CHRIS SMITH	5/8/2022	
Assigned Crew	Appt Date	Start Time
STWACTOR 5-397 Water Truck	5/8/2022	
Supervisor	End Date	End Time
10401 CHRIS SMITH	5/8/2022	
Lead Worker		
11623 SCOTT KERYON		
Priority		
2 - High/Medium		

Section 9: Attachment E

EGLE Catch Basin Cleaning Activities Guidance

CATCH BASIN CLEANING ACTIVITIES

GUIDANCE

INTRODUCTION

Catch basins are included in storm sewer system designs as a best management practice to remove pollutants such as gravel, sand, oils, and organic material carried by storm water runoff. Catch basins are designed to capture the pollutants in a sump, which may vary in depth depending on the design. The solids captured in the sump may have elevated concentrations of metals from street runoff or drainage from industrial, commercial, and residential properties. In order to maintain the effectiveness of the catch basin, the sump must be regularly inspected and cleaned out. The Water Resources Division (WRD) and Materials Management Division (MMD) of the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) oversee environmental regulations pertaining to this activity. The Michigan Occupational Safety and Health Administration (MIOSHA) within the Department of Labor and Economic Opportunity oversees confined space entry and other worker health and safety standards.

Waste generated from catch basin cleaning activities and discharged back into the storm sewer system is unauthorized per [Part 31, Water Resources Protection \(Part 31\) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended \(NREPA\)](#) and is therefore illegal. The combined solid and liquid waste stream from cleaning storm sewer systems, including catch basin sumps, is legally defined as "liquid industrial by-product" pursuant to [Part 121, Liquid Industrial By-Products \(Part 121\) of NREPA](#). If an environmental spill were captured by a storm sewer system, the material in the storm sewer system could be a hazardous waste pursuant to the [Part 111, Hazardous Waste Management \(Part 111\) of the NREPA](#) and subject to additional management requirements.

If the storm sewer system is found to contain contaminants or abandoned waste materials, report the details to EGLE by calling the [Pollution Emergency Alert System](#) at 800-292-4706.

VISUAL INSPECTION

When cleaning out catch basin sumps, it is important to conduct a visual inspection prior to the cleaning. This is necessary to ensure the water in the sump has not been contaminated and qualifies to be managed as a liquid industrial by-product. The visual inspection is important for worker safety and to ensure proper management of the material once it is removed from the catch basin sump. If contamination is expected based on a visual inspection (visible sheen, discoloration, turbidity, obvious odor, etc.), a grab sample should be collected and analyzed

before handling the materials and generating a waste. While waiting for the sample analysis, efforts to prevent stormwater from entering the storm sewer system should be taken. For additional details on performing visual inspections, see the U.S. Environmental Protection Agency's [Storm Water Management Fact Sheet on Visual Inspections](#). For additional details on sampling and determining if a material is hazardous or not, please see the [EGLE Waste Characterization Guidance](#).

HANDLING THE LIQUID INDUSTRIAL BY-PRODUCT

The following are options for handling liquid industrial by-products generated from catch basin cleaning activities:

1. Have the liquid industrial by-product transported to drying beds to separate the solids and liquids. This is usually performed at a publicly-owned treatment plant or at a privately-owned permitted facility where the liquid portion of the waste stream is separated from the solids and treated prior to discharge. Once dry, the solids should be disposed in a licensed solid waste landfill in accordance with [Part 115](#), Solid Waste Management, of the NREPA.
2. Request permission from the local wastewater treatment plant operator to discharge the combined solid/liquid waste into the sanitary system. Most treatment plants will require pre-treatment prior to the discharge. All applicable local ordinance provisions must be followed.
3. When conducting catch basin cleaning activities where the above options are not available, the following method can be used after the water in the sump is confirmed to be non-contaminated.
 - Using a sump pump, or any other pumping mechanism, remove the majority of water in the sump of the basin without disturbing the solid material below. Do not use pumps connected to the vacuum truck's holding tank.
 - The clear water may then be directly discharged to one of the following:
 - Municipal sanitary sewer system (with prior approval from local sewer authority).
 - Application to the ground adjacent to the catch basin may be allowed on a site-specific basis. To learn more about this option, contact the WRD, Groundwater Discharge Program, at 517-290-9607.
 - The remaining liquid/solid in the sump should be collected with a vacuum truck and disposed of off-site in accordance with [Parts 115 or 121](#).

The owner of the storm sewer system is responsible for meeting the liquid industrial by-products generator requirements under [Part 121](#), even if the catch basins are cleaned out by a private contractor. See the [Liquid Industrial By-Products Generator Requirements](#) guidance for more details on the generator requirements for handling liquid industrial by-products.

Transporters of catch basin clean-out materials must be permitted and registered to transport liquid industrial by-products. Only local, state, and federal government agencies are exempt from

this and only when using their own vehicles and staff to do the work. Transporters needing a permit and registration must notify MMD of their transport activity and obtain a Site Identification Number using the [EQP5150 Form](#). There is a \$50 fee for a new Site Identification Number that can be paid for [on-line](#). For more details on transporter requirements, see the [Hazardous Materials Transportation Act, 1998 PA 138, as amended](#) and [Transporters Web page](#).

When the liquid by-product is transported over public roadways by local government officials or by contractors, a [shipping document](#) is required. The shipping document can be a bill of lading, non-hazardous waste manifest, uniform hazardous waste manifest, consolidated shipping document, etc. The shipping records must be kept by both the generator and the transporter for at least three years from the date of shipment. The portion of the vehicle that contains the liquid industrial by-product and/or containers used to transport the liquid industrial by-products must be kept closed except when adding or removing the waste, and the exteriors must be kept free of any liquid industrial by-products and residue. Containers must also be labeled with words describing their contents. For more details on shipping documents, including details on consolidated shipping documents, please see the [Liquid Industrial By-Products Frequently Asked Questions](#).

Facilities accepting liquid industrial by-products must meet the following operating requirements:

- They must notify MMD using the [EQP 5150 Form](#) that they are operating a liquid industrial by-product designated facility, obtain a Site Identification Number, and meet the operating requirements under [Part 121](#). This includes implementing practices to prevent unauthorized discharge of the liquid industrial by-products; keeping shipping, training, and other records; having emergency response plans; annually reporting the amount and types of liquid industrial by-products received; and reporting unauthorized release to the environment. If managing containers of liquid industrial, they must be kept closed, labeled, and protected from the weather, fire, physical damage, and vandals.
- The discharge of the liquids into the treatment plant that is permitted by the WRD must meet the wastewater treatment plant requirements. Any other discharge of the liquids would require a separate EGLE discharge permit.
- Any resulting solid waste from processing must be managed as specified under [Part 115](#) and disposed in a licensed solid waste landfill. Contact the landfill for the specific testing and disposal requirements needed to verify the waste is solid and not a hazardous waste. They will likely require specific tests or only accept data from specific laboratories. Ask the disposal company for a list of required tests, the purpose for the tests, approved testing methods, and acceptable laboratories. The solids cannot be used as fill on public or private property, or for any other use, unless they meet the conditions in Section 11504 of [Part 115](#) and can be demonstrated to be an inert material. EGLE relies upon the methods in the [Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria](#) for collecting representative samples.

See [Part 121](#) for more details on the operating requirements for liquid industrial by-products designated facilities.

Street sweeping activities are also subject to the above solid waste requirements. Street sweeping involves the use of specialized equipment to remove litter, loose gravel, soil, pet waste, vehicle debris and pollutants, dust, de-icing chemicals, and industrial debris from road surfaces. See the best management practices for [Street Sweeping](#).

WHERE TO GO FOR HELP

- Using the solids as fill or other use under Part 115:
[Jeff Spencer](#): 517-281-4411 | SpencerJ3@Michigan.gov
- Part 121 and Hazardous Materials Transportation Act transportation requirements:
[Jeanette Noechel](#): 586-494-5091 | NoechelJ@Michigan.gov
- Managing waste under Part 31, or general questions regarding this guidance
[Christe Alwin](#): 517-420-1501 | AlwinC@Michigan.gov
- Groundwater permitting requirements
[Sherry Thelen](#): 517-290-9607 | ThelenS5@Michigan.gov
- Confined space entry requirements:
[MIOSHA Consultation, Education and Training Division](#): 800-866-4674

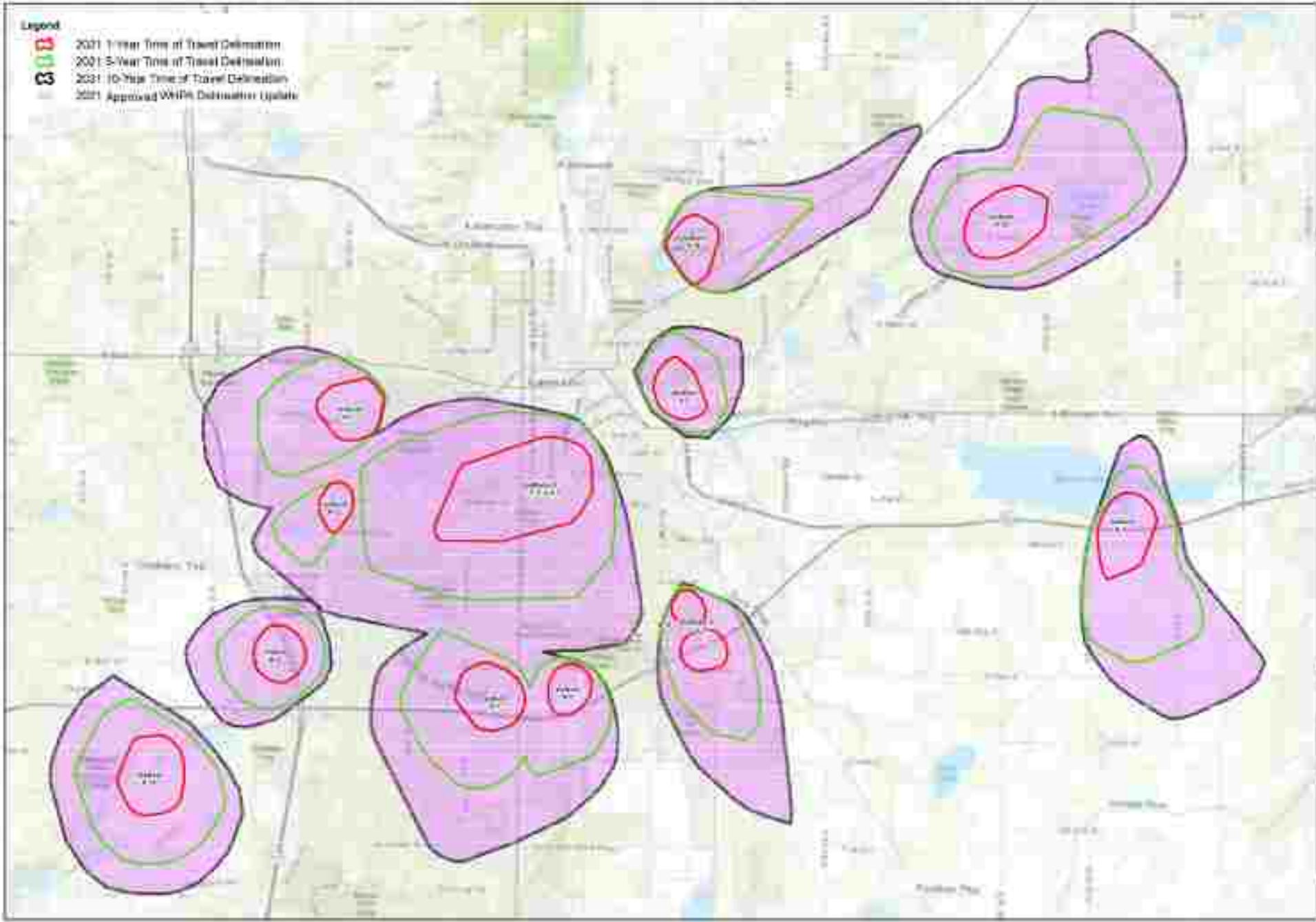
This publication is intended for guidance only and may be impacted by changes in legislation, rules, policies, and procedures adopted after the date of publication. Although this publication makes every effort to teach users how to meet applicable compliance obligations, use of this publication does not constitute the rendering of legal advice.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations.

Section 8: Attachment D

Wellhead Protection Zoning Overlay Map

(Ordinance 1825)



Legend

- 2021 1-Year Time of Travel Delimitation
- 2001 5-Year Time of Travel Delimitation
- 2021 10-Year Time of Travel Delimitation
- 2021 Approved WTRP Delimitation Update



CITY OF KALAMAZOO
1000 EAST MAIN STREET • KALAMAZOO, MI 49001

2021 Approved 10-Year, 5-Year, and 1-Year
 Regional WTRP Delimitation Update

DATE	ISSUED
07/20/21	10/08/21
<small>APPROVED BY: [Signature]</small> <small>APPROVED BY: [Signature]</small>	



Section 9: Attachment F

EPA Stormwater O&M Fact Sheet Catch Basin Cleaning



Storm Water O&M Fact Sheet Catch Basin Cleaning

DESCRIPTION

Catch basins are chambers or sumps, usually built at the curb line, which allow surface water runoff to enter the storm water conveyance system. Many catch basins have a low area below the invert of the outlet pipe intended to retain coarse sediment. By trapping sediment, the catch basin prevents solids from clogging the storm sewer and being washed into receiving waters. Catch basins must be cleaned periodically to maintain their ability to trap sediment, and consequently their ability to prevent flooding. The removal of sediment, decaying debris, and highly polluted water from catch basins has aesthetic and water quality benefits, including reducing foul odors, reducing suspended solids, and reducing the load of oxygen-demanding substances that reach receiving waters.

APPLICABILITY

Catch basin cleaning should be performed at any facility that has an on-site storm sewer system that includes catch basins and manholes.

Although catch basin cleaning is easily implemented, it is often overlooked in an overall storm water management plan. In addition, many of the catch basin cleaning programs that have been implemented focus only on removal of debris from grate openings; full implementation of the catch basin cleaning BMP should also include removal of debris from the catch basin itself.

ADVANTAGES AND DISADVANTAGES

Catch basin cleaning is an efficient and cost-effective method for preventing the transport of

sediment and pollutants to receiving water bodies. This improves both the aesthetics and the quality of the receiving water body.

Limitations associated with cleaning catch basins include:

- Catch basin debris usually contains appreciable amounts of water and offensive organic material which must be properly disposed.
- Catch basins may be difficult to clean in areas with poor accessibility and in areas with traffic congestion and parking problems.
- Cleaning is difficult during the winter when snow and ice are present.

Sediment and debris removed from catch basins can potentially be classified as hazardous waste. As a result, the materials must be disposed in a proper manner to avoid negative environmental impacts.

PERFORMANCE

Based on current data, it is not possible to quantify the water quality benefits to receiving waters resulting from catch basin cleaning. The rate at which catch basins fill with debris, as well as the total amount of material which can be removed by different frequencies of cleaning, are highly variable and cannot be readily predicted. Past studies have estimated that typical catch basins retain up to 57 percent of coarse solids and 17 percent of equivalent biological oxygen demand (BOD).

In addition, data collected as part of a Nationwide Urban Runoff Program (NURP) project in Castro Valley Creek, California, indicated that catch basins, cleaned on an average of once every year and a half, contained approximately 60 pounds of material each at the time of the cleaning.

OPERATION AND MAINTENANCE

Catch basins should be inspected at least annually to determine if they need to be cleaned. Typically, a catch basin should be cleaned if the depth of deposits is greater than or equal to one-third the depth from the basin to the invert of the lowest pipe or opening into or out of the basin. If a catch basin significantly exceeds the one-third depth standard during the annual inspection, then it should be cleaned more frequently. If woody debris or trash accumulates in a catch basin, then it should be cleaned on at least a weekly basis.

Catch basins can be cleaned either manually or by specially designed equipment. This equipment may include bucket loaders and vacuum pumps. Material removed from catch basins is usually disposed in conventional landfills. Before any materials can be disposed, it is necessary to perform a detailed chemical analysis to determine if the materials meet the EPA criteria for hazardous waste. This will help determine how the materials should be stored, treated, and disposed.

COSTS

Catch basin cleaning costs will vary depending upon the method used, the required cleaning frequency, the amount of debris removed, and debris disposal costs.

Cleaning costs for catch basins were estimated in three NURP program studies (Midwest Research Institute, 1982). These estimates are summarized in Table 1.

In communities equipped with vacuum street sweepers, a cleaning cost of \$8 per basin cleaned is recommended for budgetary purposes (Southeastern Wisconsin Regional Planning Commission, 1991.) Cleaning catch basins manually costs

TABLE 1 CLEANING COST PER CATCH BASIN

Location	Method	Cost
Castro Valley, CA	Vacuum attached to street sweeper	\$7.70
Salt Lake County, UT	Vacuum attached to street sweeper	\$10.30
Winston-Salem, NC	Vacuum attached to street sweeper	\$8.30

Source: MRI, 1982.

approximately twice as much as cleaning the basins with a vacuum attached to a sweeper. Therefore, a cost estimate of \$16 per catch basin cleaned may be used for manual cleaning. It should be noted that costs vary depending on local market conditions.

REFERENCES

1. Midwest Research Institute, 1982. *Collection of Economic Data from Nationwide Urban Runoff Program Projects-Final Report*. Report to U.S. Environmental Protection Agency.
2. Minnesota Pollution Control Agency, 1989. *Protecting Water Quality in Urban Areas*.
3. Southeastern Wisconsin Regional Planning Commission, 1991. *Cost of Urban Nonpoint Source Water Pollution Control Measures*, Technical Report No. 31.
4. U.S. EPA, 1983. *Final Report of the Nationwide Urban Runoff Program*. EPA 841/583109.
5. U.S. EPA, 1977. *Catch Basin Technology Overview and Assessment*. EPA-600/2-77-051.
6. Washington State Department of Ecology, 1992. *Storm Water Management Manual for Puget Sound*.

ADDITIONAL INFORMATION

Alameda County, California
Jim Scanlin
Alameda Countywide Clean Water Program
951 Turner Court, Room 300
Hayward, CA 94545

King County, Washington
Dave Hancock
Department of Natural Resources, Water and Land
Resources Division, Drainage Services Section
700 5th Avenue, Suite 2200
Seattle, WA 98104

Salt Lake County, Utah
Terry Way
Salt Lake County Engineering Division
2001 South State Street, Suite N3300
Salt Lake City, UT 84190

Southeastern Wisconsin Regional Planning
Commission
Bob Biebel
916 N. East Avenue, P.O. Box 1607
Waukesha, WI 53187

City of Winston Salem, North Carolina
Terry Cornett
Department of Public Works, Streets Division
P.O. Box 2511
Winston Salem, NC 27106

The mention of trade names or commercial
products does not constitute endorsement or
recommendation for the use by the U.S.
Environmental Protection Agency.

For more information contact:

Municipal Technology Branch
U.S. EPA
Mail Code 4204
401 M St., S.W.
Washington, D.C., 20460



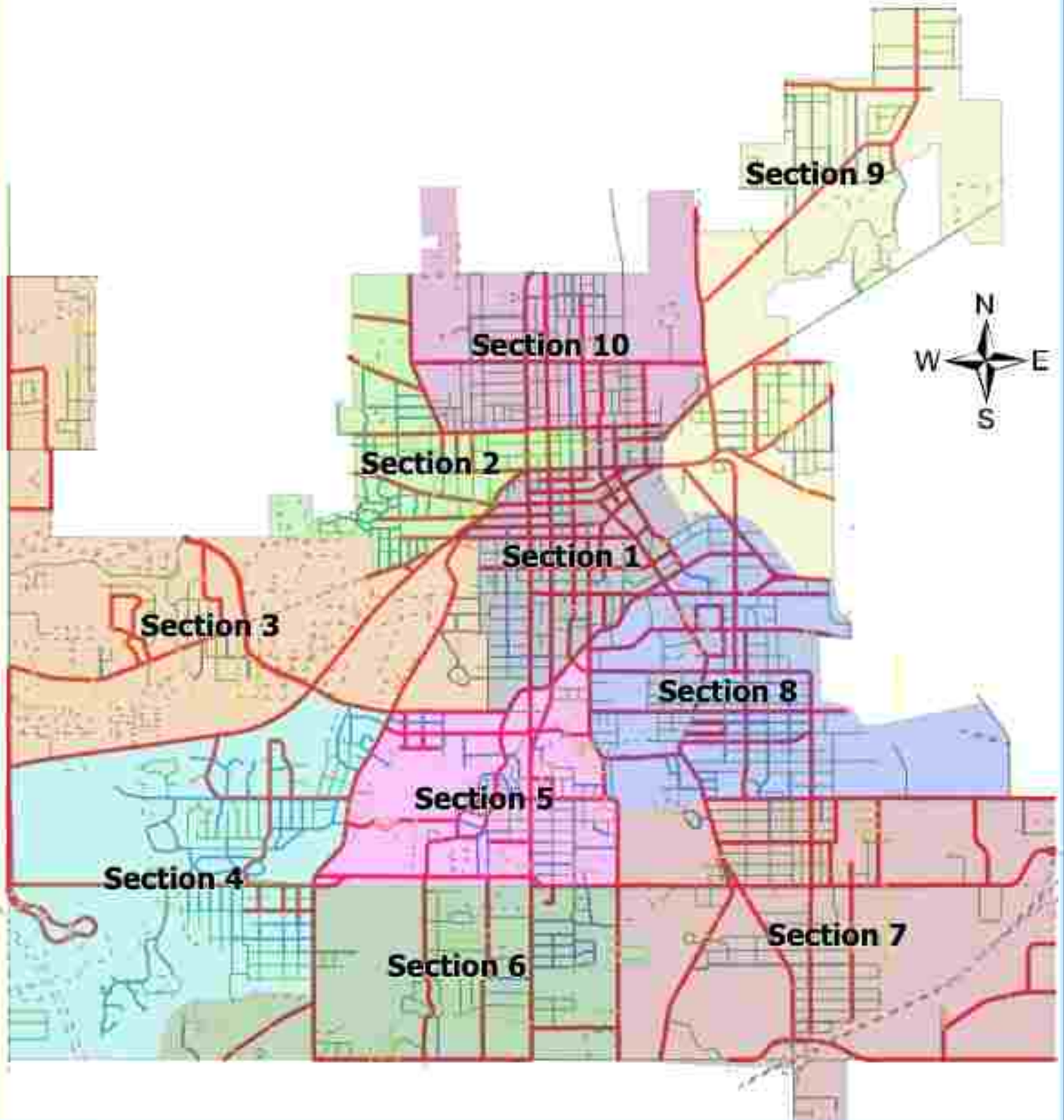
Section 9: Attachment G

City of Kalamazoo Maintenance Sections for
Street Sweeping and Snow Plowing

&

MDOT Road Map

City of Kalamazoo Maintenance Sections for Street Sweeping and Snow Plowing



Legend

Section

- 1
- 2

3

- 4
- 5
- 6

7

- 8
- 9
- 10

Priority Level

- Primary
- Secondary

Tertiary

- Other
- Small Paved Access



APPROVED
 97.27 - MILES OF MAJOR STREET
 166.07 - MILES OF LOCAL STREET
 FOR THE PERIOD
 JULY 1, 2019 to JUNE 30, 2020
 BY

 ACT 51 ADMINISTRATOR
 July 1, 2019
 DATE OF APPROVAL

MDOT ACT51

City of Kalamazoo Road System Classification Map

CITY OF KALAMAZOO
 KALAMAZOO COUNTY

POP 14,262 - 2010 CENSUS
 726.25 - R. 11W - 29W
 STREET SYSTEM
 THE MICHIGAN HIGHWAY LAW
 PUBLIC ACT 61 OF 1961, AS AMENDED
 MICHIGAN DEPARTMENT OF TRANSPORTATION
 1 inch equals 1200 feet Map size 36x48



ROAD SYSTEM	LEGEND	GEOGRAPHY
STATE TRUNKLINE	COUNTY PRIMARY	SECTION
COUNTY LOCAL	CITY MAJOR	NON FOCUS AREAS
CITY LOCAL	ADJACENT JURISDICTION	LAKE/RIVER
STATE PARKING	RAILS TO TRAILS	HYDROGRAPHY
RAILS TO TRAILS		RAILROAD

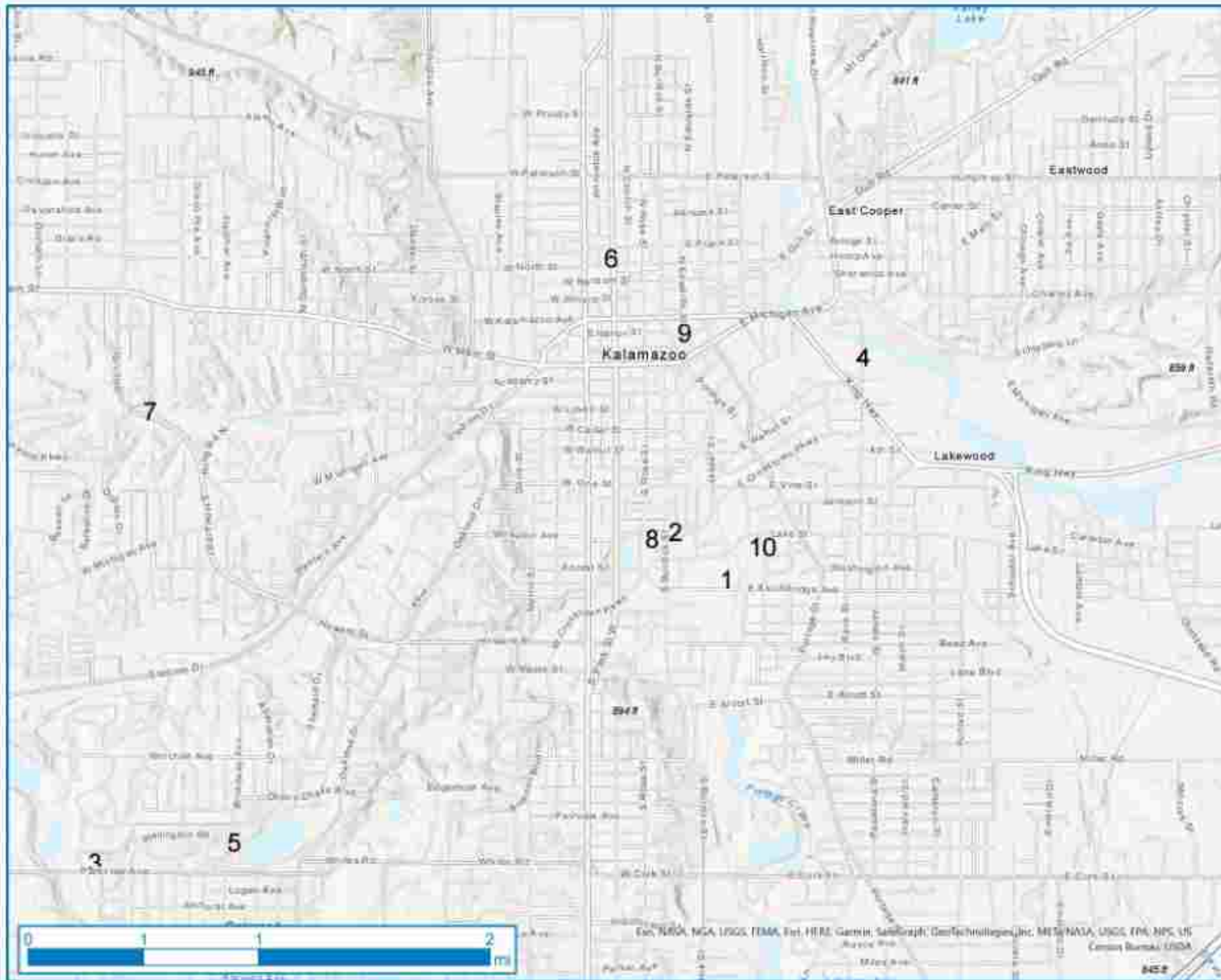
Revision Date: August 31, 2019



Section 9: Attachment H

City Owned

Stormwater Treatment Sites 2022



City Owned
 Stormwater
 Pretreatment
 Sites
 2022



Esri, NOAA, NGA, USGS, FEMA, Esri, HERE, Garmin, SwireGraph, GeoTechnologies, Inc, METI, NASA, USGS, EPA, NPS, US Census Bureau, USDA



**CITY OF KALAMAZOO MUNICIPAL OPERATIONS
STORMWATER PRETREATMENT SITES**

Map Unit Number	Stormwater Treatment BMP/Device ID#	Project Address/ Location	Project Description	Stormwater Treatment BMP/Device	Number of Devices	Responsible Party	Year Installed	Inspection Schedule	Inspection and Maintenance
1	STTDK0220010	415 E. Stockbridge Avenue	BMP to address stormwater quality and control. Public Service's Stockbridge Facility.	Aquaclear AS-4	1	Public Services (separate SWPPP)	2003	Annual	Inspected, maintained and cleaned 10/20/20, 4/20/2021 and 10/20/2021.
2	STTDK0220020	150 E. Crestview Parkway	Conversion of existing commercial building to new Public Safety Headquarters	Filter Insects	2	Public Safety (general SWPPP)	2003	Annual	Inspected 4/21/2020 and 11/1/2021 (Fair Condition, some city shovels & some chemicals on 1 unit - unit could use washing)
3	STC0K0301008 STC0K0301009 STC0K0301011 STC0K0301006 STC0K0301013 STC0K0301007 STC0K0301016 STC0K0301008 STC0K0301017 STC0K0301009	Fairview Ave - Damon St. to 1/2 mile west	Road Reconstruction Project	Stormceptor	11	Public Services	2022	Annual	Inspected in August 2021. Most in Good Condition, 5 may require Maintenance as possible
4	STTDK0140030	251 Milk St.	Construction of new City Park's Department Office Building	Aquaclear AS-2	1	Parks & Recreation (separate SWPPP)	2014	Annual	Inspected and maintained Spring 2022
5	STTDK0200120	2438 Kensington Drive Woods Lake - SW shore area	Natural Treatment System at outlet to lake from an approximate 138 acre drainage area.	Treatment Train	numerous	Public Services (general SWPPP)	2003	Annual	Inspected May 2020. Fair to Good Condition. 2021 maintenance performed. sediment removal from the sediment forebay. 335 cubic yards of sediment was removed from the sediment forebay in 2021.
6	STTDK0150040 STTDK0150050 STTDK0150060 STTDK0150070 STTDK0150080	601 N. Park St.	Public Safety Station	HydroKleen, "Catch-All" catch basin filter inserts	6	Public Safety (general SWPPP)	2007	Annual	Inspected 10/28/2021: Pretty good Condition. Leaves & mulch accumulating on top of catch unit, regular maintenance needed to keep units at least somewhat what free of accumulating leaves & mulch.
7	STTDK0220140	Kendall St. & Howard St. (east roundabout)	City of Kalamazoo Public Services, Arbutus Parkway connector & roundabouts	Cortech COE separator	1	Public Services	2010	Annual	Last inspected 10/6/2021. In good condition. Minimal sediment accumulation.
8	STSPK0220130	128 Vander Swin Court	City of Kalamazoo Public Services, STTDK0221323 Vandercreek 2011 storm relief station	two 50-gpm pumps & Aquaclear	1	Public Services (C. Nelson, KWPP)	2011	Annual	11/12/2021 inspected: Good Condition
9	STTDK0150100	160 E. Water St.	Lot 9	ACS BaySever Barricade Stormwater Separator	1	Public Services	2021	Annual	Unable to access in 2021 due to construction zone.
10	NA	500 Collins Road	Kalamazoo Farmers Market	Aquaclear AS-6	1	Public Services	NA	Annual	Under construction.

Section 9: Attachment I

City of Kalamazoo

Retention/Detention Basins 2022



City of Kalamazoo Retention/Detention Basins 2022

- Legend**
- Retention/Detention Basins
 - Run/Div Basins
 - Call other values
 - Call other values
 - Culvert In
 - Culvert Out
 - Storm
 - Inlet Outfall
 - Leaching Basin
 - Manhole
 - Outfall to Ground
 - Outfall to Water
 - Private Outfall
 - Stormwater Pump
 - City of Kalamazoo
 - City of Parchees
 - City of Portage
 - WDC
 - WDOT
 - Private
 - ROC



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City of Kalamazoo Retention/Detention Basins

Address	Location	ID	Approximate Year Constructed	Outlet ID's	Approximate Size	Comments	Inspection & Maintenance
3025 Kent Avenue	Benton Ave. - between Leland and Kent Streets	STOCHB00000	1977	STOWNC0374 STOWNC0375	28,000 sq. ft.		Inspected 03/10/2021 and 10/02/2021. Outlet Good. Maintenance has been performed.
3412 Wood Street, 3418 Wood Street	Wood St. (44th Block)	STOCHB00070	1980	STOWNC0349	9,500 sq. ft.		Inspected 03/10/2021 and 10/02/2021. Outlet good, needs brush & weed (weed) - interfere with power lines & trees, including gate.
400 S. Karstad Avenue	Karstad & Sibley Streets	STOCHB00040	1961	STOGR02008 STOGR02009	48,000 sq. ft.	Overflow structure to area east of Karstad	Inspected 03/09/2021 and 10/02/2021. Good Condition. Some sediment accumulation in STOGR02008 documented during 2021 inspection.
1027 W. Michigan Avenue	Street to E. of W. Michigan Ave. - south of intersection.	STOGRB01009	2008	STOGR0210011 STOGR0210010	7,300 sq. ft.		Inspected 03/10/2021 and 10/02/2021. Good Condition.
4801 W. Michigan Avenue	Between W. Westgate & Stadium Dr. 4000 Block - behind water park	STOGRB10010	1977	STOWNC18072 STOWNC18071 STOWNC18070 STOWARC18001	800,000 sq. ft.	Discharge flow control structure to Anacapa Creek	Inspected 10/19/2021. Machine STOWRC18101 needs cover due to concurrent overflow from basin. Outlet appear to be okay - carried loads about STOWARC18001. Under Engineering Review to correct hydraulic function and possible sediment removal.
4026 Kingsbrook Drive	Corbettland St. & Grand Prairie Ave.	STOGRB01000	1988	STOGR0078 STOWKC0712	30,000 sq. ft.		Inspected 03/09/2021 and 10/02/2021. North side fence falling down; brush & trash need to be cleared - interfere with power lines & trees, including gate.
Sage St. West	E. of Sage St. & S. of Tunell Ln.	STOGRB10000	1979	STOWKT1825 STOWKT1828 STOWKT181018	172,000 sq. ft.		Inspected 03/09/2021 and 10/02/2021. Outlet STOWKT1825 & 1828 need regular cleaning due to accumulation of leaves & other debris from stormwater flows. Brush okay otherwise. 2021 Machine STOWKT181018 and 1825 were cleaned.
2714 S. Burdick Street	North of Halpern Street	STOGRB01006	1980s ?	STOGR021000	5,000 sq. ft.		Inspection 4/01/2020 and 10/19/2021. Fence Collapsed. Many Trees & Limbs down, fence needs down, needs repair. Outlet STOGR021000 okay.

Note: All stormwater basins will be inspected on an annual basis with maintenance performed as necessary and as resources allow.

Section 9: Attachment J

Lake Allegan/Kalamazoo River Watershed TMDL
Implementation Strategic Plan for 2012 and Beyond –
Revision 2021

Section 9: Attachment K

Pesticide Certification Registration Information

PESTICIDE CERTIFICATION-REGISTRATION CATEGORIES

CATEGORY	DESCRIPTION	CATEGORY	DESCRIPTION
1A Field Crops	This includes applicators who use pesticides for the production of field crops; cereal grains, feed grains, beans, soybeans, sugarbeets, forage.	6 Right-of-Way Pest Management	This includes applicators who use pesticides in the maintenance of any of the following: public roads, ditch banks, electric power lines, pipelines, railway rights-of-way, parking lots, tennis courts, similar noncrop areas.
1B Vegetable Crops	This includes applicators who use pesticides for the production of vegetable crops, tomatoes, potatoes, snap beans, celery, onions, cucurbits, cole crops, sweet corn.	7A General Pest Management	This includes applicators who use pesticides in, on, or around any of the following: food-handling establishments, human dwellings, institutions such as schools and hospitals.
1C Fruit Crops	This includes applicators who use pesticides for the production of tree fruit; apples, cherries, pears, peaches, plums, nuts, blueberries, strawberries, grapes, and raspberries.	7B Wood Destroying Pest Management	This includes applicators who use pesticides in, on, or around structures for the management of wood-destroying pests, such as any of the following: termites, powder post beetles, carpenter ants, wood-destroying fungi.
1D Livestock Pest Management	This includes applicators who use pesticides on animals; cattle, swine, sheep, horses, goats, other livestock, poultry. A person who uses pesticides on or in places where animals are confined.	7D Vertebrate Pest Management	This includes applicators who use pesticides to manage vertebrate pests, such as birds, cats, or mice.
2 Forest Pest Management	This includes applicators who use pesticides in any of the following areas: forests, forest nurseries, Christmas tree plantations, forest seed-producing areas.	7E Interior Plant Pest Management	This includes applicators who use pesticides in the maintenance of plants at inside locations, such as any of the following: homes, offices, shopping malls, stores, similar sites.
2A Wood Preservation	This includes applicators who use pesticides for preserving wood products.	7F Mosquito Management	This includes applicators who use pesticides to manage mosquitoes in an outside environment.
3A Turfgrass Pest Management	This includes applicators who use pesticides to manage pest of turf grasses.	7G Domestic Animal Pest Management	This includes applicators who use pesticides to control pests associated with small domestic animals, such as cats and dogs.
3B Ornamental Pest Management	This includes applicators who use pesticides to manage pests of ornamental plants in exterior areas, such as evergreens, shrubs, and shade trees.	8 Public Health Pest Management	This includes state, federal, or other government employees who use pesticides in public health programs for the management of pests that have medical and public health importance, excluding mosquitoes.
4 Seed Treatment	This includes applicators who use pesticides on any of the following: seeds, corns, tubers, rhizomes, stolons, other plant parts used or propagation.	9 Regulatory Pest Management	This includes state, federal, or other government employees who use pesticides in the management of regulated pests.
5 Aquatic Pest Management	This includes applicators who use pesticides which are applied to lakes, ponds, streams, marshes, or ditches and tributaries which flow into them or which are applied to surfaces that contact such bodies of water to manage aquatic pest. This category does not include applicators who engage in mosquito management.	10 Demonstration and Research Pest Management	This includes individuals who demonstrate to the public the proper use, and techniques of application of pesticides, who supervise the demonstrations, or who conduct field research with pesticides and, in so doing, use restricted-use pesticides.
5A Swimming Pools	This includes applicators who use pesticides in maintaining public or private swimming pools to manage algae, bacteria, or other swimming pool pests.	AE Aerial	Applicators who apply pesticides by aircraft.
5B Microbial Pest Management	This includes applicators who use pesticides in any of the following to manage bacteria, fungi, algae or viruses; cooling towers, air washers, evaporative condensers, pulp and paper mills, sewer treatment, other applications.	FUM Fumigation	Includes the application of a fumigant for structural, soil, barge, stored commodity and greenhouse pests.
5C Sewer Line Pest Management	This includes applicators who use pesticides in sewer lines for root control.		



Pesticide Applicator Certification

Department of Agriculture & Rural Development

Licensing

Pesticide Licensing & Certification

Pesticide Applicator C

[Pesticide Terms & Definitions](#)

Pesticide Applicator Certification Process

If you have taken a certification exam through Metro Institute or re-certification seminars to renew your pesticide applicator certification, please be aware you must complete the certification/registration process by submitting a paper "Pesticide Applicator Certification/Registration Application" and application fee to MDARD.

Without submitting a completed Michigan Department of Agriculture and Rural Development (MDARD) application and fee, you are NOT considered certified and will not receive a credential from MDARD.

Applicators who are renewing their certification/registration must submit a completed paper renewal notice with the appropriate fee via check or money order (\$50 for Private Certification / \$75 for Commercial Certification / \$45 for Registered Applicator). If you have misplaced your renewal notice, please contact MDARD at 800-292-3939 or Lisa Graves at GravesL@michigan.gov for a duplicate copy.

Applicators who are newly becoming certified/registered must submit a completed initial Pesticide Applicator Certification/Registration Application with the appropriate fee via check or money order (\$50 for

Private Certification / \$75 for Commercial Certification / \$45 for Registered Applicator).

[Emergency Rule Amending Rule 7, R 285.636.7](#)

A new emergency rule filed on December 30, 2020 by Michigan Department of Agriculture and Rural Development (MDARD) Director Gary McDowell extended pesticide applicator credential expiration dates as part of the state's continued COVID-19 response. Applicators whose license expired on December 31, 2019 or December 31, 2020 will have those licenses extended to June 30, 2021. In addition to extending the expiration date, the rule gives applicators six additional months to renew their credential via continuing education courses.

[Pesticide Applicator Certification/Registration Application](#)

[Examination Process and Instructions](#)

MDARD also offers multiple options for taking Certified Pesticide Applicator and Registered Technician exams. Please see the following links regarding these options:

- Paper-based, in-person exams are administered at limited locations in Michigan through MDARD. Access the online pesticide exam scheduling website for more information on availability and to schedule an exam.
- MDARD offers two ways to take computer-based exams through Metro Institute, a private pesticide exam administration company authorized to conduct testing on MDARD's behalf. Exams can now be obtained at both established testing centers and online from your home or office. Register for computer-based exams through Metro Institute or call 877-533-2900 to speak with a representative.

[Applicator Exam Video Training](#)

[Pesticide Application Certification Details & FAQ](#)

[Commercial Pesticide Application Certification Categories](#)

[List of Study Manuals by Applicator Type](#)

Registered Pesticide Applicator Process

[Commercial Registered Applicator Programs](#)

[Registered Applicator Trainer Manual](#)

[Registered Applicator Verifiable Training Form](#)

[Training Notification for Nonregistered Pesticide Applicators](#)

Renewal/Recertification Process

[Renewal Process](#)

[Credit Requirements and Seminar Attendance Record](#)

[List of Seminars Approved for Pesticide Recertification Credits](#)

Select a Month to get Seminar Meeting Dates and Locations

Information for Seminar Hosts

[Guidelines to Apply for Pesticide Recertification Credits](#)

[Form to Request Seminar Pesticide Credits](#)

[Topics Not Eligible for Pesticide Recertification Credits](#)

[Sample Training Agenda\(s\) for Pesticide Recertification Credits](#)

Reciprocity

[Reciprocity Between States](#)

The Michigan Department of Agriculture & Rural Development has reciprocal agreements with Indiana, Minnesota, Ohio and Wisconsin.

Miscellaneous

[Reasonable Accommodation Requests for Pesticide Certification Exams](#)

Follow us

Michigan Agriculture Logo



About

The Michigan Department of Agriculture & Rural Development (MDARD) works to assure food safety, protect animal and plant health, sustain environmental stewardship, provide consumer protection, enable rural development and foster efficient administration operations through service, partnership and collaboration.

Contact Us

Michigan Department of Agriculture and Rural Development
Constitution Hall, 6th Floor
525 W. Allegan Street
P.O. Box 30017
Lansing, MI 48909
800-292-3939

[Email MDARD](#)

[Contacts](#)



[Media](#)



[Online Services](#)



[Resources](#)



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Michigan State University white graphic



Agriculture

Green Industry

Home & Garden

Invasives

Wildlife Management

Natural Enemies

Schools & Community

Pesticide Safety & Education

Welcome to the MSU Pesticide Safety Education Program. We are here to offer certification training and updates for pesticide applicators as well as to provide education and information for applicators and the general public about pesticide safety.

Questions? Contact John Stone at 517-353-5134 or stonej@msu.edu

BY POPULAR DEMAND! Pesticide Safety and Education Program Email Notification!

1. Send an email to: listserv@list.msu.edu
2. Copy and paste the following in the body of the email: **Subscribe PSEPAPPLICATORS**
3. Click send.
4. You will receive a confirmation email that will require your response.

To opt out of the list:

1. Send an email to: listserv@list.msu.edu
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