CITY OF ALEXANDRIA

STORMWATER POLLUTION PREVENTION PLAN

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Section I.
Municipal Separate Storm Sewer System Permit for Reauthorization

Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us | Equal Opportunity Employer

January 16, 2014

Karin Tank
City of Alexandria
704 Broadway
Alexandria, MN 56308

RE: Issuance of Coverage under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) General Permit MNR040000 for Municipal Separate Storm Sewer Systems for City of Alexandria MS4

Dear Ms. Tank:

In accordance with Minn. R. 7001.0140, the Commissioner of the Minnesota Pollution Control Agency (MPCA) has made a final determination to issue coverage under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) General Permit MNR040000 for Municipal Separate Storm Sewer Systems (MS4 General Permit) to the City of Alexandria, effective January 16, 2014. Please find enclosed a copy of the above referenced MS4 General Permit.

The MPCA's final decision to issue permit coverage is based on the following:

- MPCA staff has reviewed your MS4 General Permit application and Stormwater Pollution Prevention Program (SWPPP) Document.
- Public notice and opportunity for comment on your MS4 General Permit application and SWPPP Document has been provided, and no comments were received.

As you know, it is the responsibility of the MS4 owner and/or operator to comply with the requirements of the MS4 General Permit and your SWPPP Document. This issuance of coverage does not preclude the MPCA from following up with an inspection or audit to verify compliance with the MS4 General Permit and SWPPP Document. Also, be aware that as a condition of recordkeeping, Part IV.C.3. of the MS4 General Permit requires that the permittee retain their SWPPP Document and all records pertinent to it for at least three (3) years beyond the term of the MS4 General Permit.

In addition, for an MS4 that was covered under the previous MS4 General Permit (issuance date June 1, 2006), coverage under that permit is terminated on the coverage date as specified above. An MS4 covered under the new MS4 General Permit is required to report on activities that were required or committed to under the previous permit.

Finally, the MPCA thanks you for your cooperation in the permitting process. Please retain this letter as documentation of your MS4 General Permit coverage under the NPDES/SDS Permit MNR040000.

Please contact MS4 team member Cole Landgraf at 651-757-2880 with any questions.

Sincerely,

Duane Duncanson

This document has been electronically signed.

Duane Duncanson
Supervisor, Municipal Compliance Unit I
St. Paul Office
Municipal Division

cc: Alexandria MS4 File
Travis Fristed, WSB & Associates, Inc.

From: *MPCA_PCA MS4 Permit Program
To: Marty Schultz; *MPCA_PCA MS4 Permit Program
Cc: Travis Fristed; Karin Tank; Landgraf, Cole (MPCA)
Subject: RE: City of Alexandria MS4 SWPPP Document
Date: Wednesday, October 30, 2013 1:59:39 PM

Thank you for submitting your Municipal Separate Storm Sewer System (MS4) Stormwater Pollution Prevention Program (SWPPP) document and application for coverage under the National Pollutant Discharge Elimination System/State Disposal System General Permit MNR040000 for MS4s (Permit). The staff of the Municipal Division at the Minnesota Pollution Control Agency (MPCA) has received your SWPPP document and application materials, and will contact you regarding any questions or comments.

Please continue to operate under the terms of the MS4 permit issued in March 2006; coverage cannot be extended under the new Permit (effective August 1, 2013) until the MPCA has completed the public noticing of your SWPPP Document and application materials and the MPCA Commissioner has made a final determination to approve or deny permit coverage. More information on the public notice process for MS4 SWPPP documents is available at www.pca.state.mn.us/bkzqa7d.

Please let me know if you have any questions.

Thanks,

Cole Landgraf
cole.landgraf@state.mn.us
651-757-2880

From: Marty Schultz [mailto:mschultz@rea-alp.com]
Sent: Wednesday, October 30, 2013 1:40 PM
To: *MPCA_PCA MS4 Permit Program
Cc: tfristed@wsbeng.com; Karin Tank
Subject: City of Alexandria MS4 SWPPP Document

Please see the attached document containing the MS4 SWPPP Application for Reauthorization.

Feel free to contact me should you have any questions.

Regards,

Marty

Martin Schultz
City Administrator
City of Alexandria
704 Broadway
Alexandria, MN 56308
320-763-6678 (City Hall)

320-759-3629 (direct)
320-763-3511 (fax)
mschultz@rea-alp.com

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

MS4 SWPPP Application for Reauthorization

for the NPDES/SDS General Small Municipal Separate Storm Sewer System (MS4) Permit MNR040000 reissued with an effective date of August 1, 2013

Stormwater Pollution Prevention Program (SWPPP) Document

Doc Type: Permit Application

Instructions: This application is for authorization to discharge stormwater associated with Municipal Separate Storm Sewer Systems (MS4s) under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit Program. **No fee** is required with the submittal of this application. Please refer to "Example" for detailed instructions found on the Minnesota Pollution Control Agency (MPCA) MS4 website at http://www.pca.state.mn.us/ms4.

Submittal: This *MS4 SWPPP Application for Reauthorization* form must be submitted electronically via e-mail to the MPCA at ms4permitprogram.pca@state.mn.us from the person that is duly authorized to certify this form. All questions with an asterisk (*) are required fields. All applications will be returned if required fields are not completed.

Questions: Contact Claudia Hochstein at 651-757-2881 or claudia.hochstein@state.mn.us, Dan Miller at 651-757-2246 or daniel.miller@state.mn.us, or call toll-free at 800-657-3864.

General Contact Information (*Required fields)

MS4 Owner (with ownership or operational responsibility, or control of the MS4)

*MS4 permittee name: City of Alexandria *County: Douglas
(city, county, municipality, government agency or other entity)

*Mailing address: 704 Broadway

*City: Alexandria *State: MN *Zip code: 56308

*Phone (including area code): 320-759-3647 *E-mail: ktank@rea-alp.com

MS4 General contact (with Stormwater Pollution Prevention Program [SWPPP] implementation responsibility)

*Last name: Tank *First name: Karin
(department head, MS4 coordinator, consultant, etc.)

*Title: Assistant Planner

*Mailing address: 704 Broadway

*City: Alexandria *State: MN *Zip code: 56308

*Phone (including area code): 320-759-3647 *E-mail: ktank@rea-alp.com

Preparer information (complete if SWPPP application is prepared by a party other than MS4 General contact)

Last name: Fristed First name: Travis
(department head, MS4 coordinator, consultant, etc.)

Title: Environmental Scientist (WSB & Associates, Inc.)

Mailing address: 701 Xenia Avenue South, Suite 300

City: Minneapolis State: MN Zip code: 55416

Phone (including area code): 763-287-7169 E-mail: tfristed@wsbeng.com

Verification

1. I seek to continue discharging stormwater associated with a small MS4 after the effective date of this Permit, and shall submit this *MS4 SWPPP Application for Reauthorization* form, in accordance with the schedule in Appendix A, Table 1, with the SWPPP document completed in accordance with the Permit (Part II.D.). ☒ Yes
2. I have read and understand the NPDES/SDS MS4 General Permit and certify that we intend to comply with all requirements of the Permit. ☒ Yes

Certification (All fields are required)

☒ Yes - *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted.*

I certify that based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of civil and criminal penalties.

This certification is required by Minn. Stat. §§ 7001.0070 and 7001.0540. The authorized person with overall, MS4 legal responsibility must certify the application (principal executive officer or a ranking elected official).

By typing my name in the following box, I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing my application.

Name: Martin Schultz
(This document has been electronically signed)

Title: City Administrator Date (mm/dd/yyyy): October 29, 2013

Mailing address: 704 Broadway

City: Alexandria State: MN Zip code: 56308

Phone (including area code): 320-759-3629 E-mail: mschultz@rea-alp.com

***Note:** The application will not be processed without certification.*

Stormwater Pollution Prevention Program Document

I. Partnerships: (Part II.D.1)

A. List the **regulated small MS4(s)** with which you have established a partnership in order to satisfy one or more requirements of this Permit. Indicate which Minimum Control Measure (MCM) requirements or other program components that each partnership helps to accomplish (List all that apply). Check the box below if you currently have no established partnerships with other regulated MS4s. If you have more than five partnerships, hit the tab key after the last line to generate a new row.

☒ No partnerships with regulated small MS4s

Name and description of partnership	MCM/Other permit requirements involved

B. If you have additional information that you would like to communicate about your partnerships with other regulated small MS4(s), provide it in the space below, or include an attachment to the SWPPP Document, with the following file naming convention: *MS4NameHere_Partnerships.*

II. Description of Regulatory Mechanisms: (Part II.D.2)

Illicit discharges

A. Do you have a regulatory mechanism(s) that effectively prohibits non-stormwater discharges into your small MS4, except those non-stormwater discharges authorized under the Permit (Part III.D.3.b.)? ☐ Yes ☒ No

1. If **yes:**

   a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

   ☐ Ordinance ☐ Contract language
   ☐ Policy/Standards ☐ Permits
   ☐ Rules
   ☐ Other, explain: _____

   b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

   Citation:

   Direct link:

   ☐ Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_IDDEreg.*

2. If **no:**

   Describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

   City Ordinance No. 656 (Section 12.13) does prohibit illegal disposal, illicit discharges and connections. The City has drafted a new ordinance which includes definitions, exemptions, and defines regualtory authority for inspections, monitoring, enforcement, and corrective actions. This draft ordiance will be finalized in 2014 and

formally adopted within 12 months from the date MS4 permit coverage is extended to the City.

Construction site stormwater runoff control

A. Do you have a regulatory mechanism(s) that establishes requirements for erosion and sediment controls and waste controls? ☒ Yes ☐ No

1. If **yes:**

a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

☒ Ordinance ☐ Contract language
☒ Policy/Standards ☒ Permits
☐ Rules
☒ Other, explain: Development Agreement

b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

City of Alexandria Ordiance No. 622

Direct link:

website: ci.alexandria.mn.us, "Stormwater Management Program" webpage, "Stormwater Regulations"

http://www.ci.alexandria.mn.us/index.asp?SEC=D63C14CF-D7C4-40F3-A9BB-3B35D4A590C0&Type=B_BASIC

☐ Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_CSWreg.*

B. Is your regulatory mechanism at least as stringent as the MPCA general permit to Discharge Stormwater Associated with Construction Activity (as of the effective date of the MS4 Permit)? ☒Yes ☐ No

If you answered **yes** to the above question, proceed to C.

If you answered **no** to either of the above permit requirements listed in A. or B., describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

C. Answer **yes** or **no** to indicate whether your regulatory mechanism(s) requires owners and operators of construction activity to develop site plans that incorporate the following erosion and sediment controls and waste controls as described in the Permit (Part III.D.4.a.(1)-(8)), and as listed below:

1. Best Management Practices (BMPs) to minimize erosion. ☒ Yes ☐ No
2. BMPs to minimize the discharge of sediment and other pollutants. ☒ Yes ☐ No
3. BMPs for dewatering activities. ☒ Yes ☐ No
4. Site inspections and records of rainfall events ☒ Yes ☐ No
5. BMP maintenance ☒ Yes ☐ No
6. Management of solid and hazardous wastes on each project site. ☒ Yes ☐ No
7. Final stabilization upon the completion of construction activity, including the use of perennial vegetative cover on all exposed soils or other equivalent means. ☒ Yes ☐ No
8. Criteria for the use of temporary sediment basins. ☒ Yes ☐ No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

Post-construction stormwater management

A. Do you have a regulatory mechanism(s) to address post-construction stormwater management activities?
☒ Yes ☐ No

1. If **yes:**

a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

☒ Ordinance ☐ Contract language

☒ Policy/Standards ☐ Permits
☒ Rules
☐ Other, explain: _____

b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

City of Alexandria Ordinance No. 656 *(ci.alexandria.mn.us, "Ordinances" tab, "2010 Ordinances", "Ordinance No. 656.pdf Storm Water Management")* and Comprehensive Stormwater management Plan *(available by CD only)*.

Direct link: Not Available

☐ Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_PostCSWreg.*

B. Answer **yes** or **no** below to indicate whether you have a regulatory mechanism(s) in place that meets the following requirements as described in the Permit (Part III.D.5.a.):

1. **Site plan review:** Requirements that owners and/or operators of construction activity submit site plans with post-construction stormwater management BMPs to the permittee for review and approval, prior to start of construction activity. ☒ Yes ☐ No

2. **Conditions for post construction stormwater management:** Requires the use of any combination of BMPs, with highest preference given to Green Infrastructure techniques and practices (e.g., infiltration, evapotranspiration, reuse/harvesting, conservation design, urban forestry, green roofs, etc.), necessary to meet the following conditions on the site of a construction activity to the Maximum Extent Practicable (MEP):

   a. For new development projects – no net increase from pre-project conditions (on an annual average basis) of: ☐ Yes ☒ No
      1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
      2) Stormwater discharges of Total Suspended Solids (TSS).
      3) Stormwater discharges of Total Phosphorus (TP).

   b. For redevelopment projects – a net reduction from pre-project conditions (on an annual average basis) of: ☐ Yes ☒ No
      1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
      2) Stormwater discharges of TSS.
      3) Stormwater discharges of TP.

3. **Stormwater management limitations and exceptions:**

   a. Limitations

      1) Prohibit the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) when the infiltration structural stormwater BMP will receive discharges from, or be constructed in areas: ☐ Yes ☒ No
         a) Where industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES/SDS Industrial Stormwater Permit issued by the MPCA.
         b) Where vehicle fueling and maintenance occur.
         c) With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
         d) Where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.

      2) Restrict the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), without higher engineering review, sufficient to provide a functioning treatment system and prevent adverse impacts to groundwater, when the infiltration device will be constructed in areas: ☐ Yes ☒ No
         a) With predominately Hydrologic Soil Group D (clay) soils.
         b) Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
         c) Within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13.
         d) Where soil infiltration rates are more than 8.3 inches per hour.

      3) For linear projects where the lack of right-of-way precludes the installation of volume control practices that meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), the permittee's regulatory mechanism(s) may allow ☐ Yes ☒ No

exceptions as described in the Permit (Part III.D.5.a(3)(b)). The permittee's regulatory mechanism(s) shall ensure that a reasonable attempt be made to obtain right-of-way during the project planning process.

4. **Mitigation provisions:** The permittee's regulatory mechanism(s) shall ensure that any stormwater discharges of TSS and/or TP not addressed on the site of the original construction activity are addressed through mitigation and, at a minimum, shall ensure the following requirements are met:
   a. Mitigation project areas are selected in the following order of preference: ☐ Yes ☒ No
      1) Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
      2) Locations within the same Minnesota Department of Natural Resource (DNR) catchment area as the original construction activity.
      3) Locations in the next adjacent DNR catchment area up-stream
      4) Locations anywhere within the permittee's jurisdiction.
   b. Mitigation projects must involve the creation of new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP. ☒ Yes ☐ No
   c. Routine maintenance of structural stormwater BMPs already required by this permit cannot be used to meet mitigation requirements of this part. ☐ Yes ☒ No
   d. Mitigation projects shall be completed within 24 months after the start of the original construction activity. ☐ Yes ☒ No
   e. The permittee shall determine, and document, who will be responsible for long-term maintenance on all mitigation projects of this part. ☒ Yes ☐ No
   f. If the permittee receives payment from the owner and/or operator of a construction activity for mitigation purposes in lieu of the owner or operator of that construction activity meeting the conditions for post-construction stormwater management in Part III.D.5.a(2), the permittee shall apply any such payment received to a public stormwater project, and all projects must be in compliance with Part III.D.5.a(4)(a)-(e). ☐ Yes ☒ No

5. **Long-term maintenance of structural stormwater BMPs:** The permittee's regulatory mechanism(s) shall provide for the establishment of legal mechanisms between the permittee and owners or operators responsible for the long-term maintenance of structural stormwater BMPs not owned or operated by the permittee, that have been implemented to meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)). This only includes structural stormwater BMPs constructed after the effective date of this permit and that are directly connected to the permittee's MS4, and that are in the permittee's jurisdiction. The legal mechanism shall include provisions that, at a minimum:
   a. Allow the permittee to conduct inspections of structural stormwater BMPs not owned or operated by the permittee, perform necessary maintenance, and assess costs for those structural stormwater BMPs when the permittee determines that the owner and/or operator of that structural stormwater BMP has not conducted maintenance. ☒ Yes ☐ No
   b. Include conditions that are designed to preserve the permittee's right to ensure maintenance responsibility, for structural stormwater BMPs not owned or operated by the permittee, when those responsibilities are legally transferred to another party. ☒ Yes ☐ No
   c. Include conditions that are designed to protect/preserve structural stormwater BMPs and site features that are implemented to comply with the Permit (Part III.D.5.a(2)). If site configurations or structural stormwater BMPs change, causing decreased structural stormwater BMP effectiveness, new or improved structural stormwater BMPs must be implemented to ensure the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) continue to be met. ☒ Yes ☐ No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within twelve (12) months of the date permit coverage is extended, these permit requirements are met:

City ordinance No. 656 will be revised to include the new MS4 regulatory standards, consisting of treatment requirements, definitions of prohibited use (infiltration techniques), and expanded language for regional stormwater systems. The final ordinance language will be formally adopted and implemented within 12 months from the date MS4 permit coverage is extended to the City.

III. Enforcement Response Procedures (ERPs): (Part II.D.3)

A. Do you have existing ERPs that satisfy the requirements of the Permit (Part III.B.)? ☐ Yes ☒ No

1. If **yes**, attach them to this form as an electronic document, with the following file naming convention: *MS4NameHere_ERPs*.
2. If **no**, describe the tasks and corresponding schedules that will be taken to assure that, with twelve (12) months of the date permit coverage is extended, these permit requirements are met:

   Revised ERP language for MCM 3 and 5 will be implemented within 12 months from the date MS4 permit coverage is extended to the City

B. Describe your ERPs:

Construction Site Erosion and Sediment Control ERPs are defined in Subd. 7-11 of Ordinance No. 622. Illicit Discharge and Post-Construction Stormwater Management ERPs are defined in Ordinance No. 656, however the City intends to draft additional ERP ordinance language and internal protocols/procedures in 2014. The final ERP language for MCM 3 and 5 will be formally adopted and implemented within 12 months from the date MS4 permit coverage is extended to the City.

IV. Storm Sewer System Map and Inventory: (Part II.D.4.)

A. Describe how you manage your storm sewer system map and inventory:

The City's storm sewer inventory was completed in 2010, and is reviewed annually and revised to include new construction and reconstruction projects. The inventory will be revised in 2014 to include new MS4 permit definitions for outfalls and ponds.

B. Answer **yes** or **no** to indicate whether your storm sewer system map addresses the following requirements from the Permit (Part III.C.1.a-d), as listed below:

1. The permittee's entire small MS4 as a goal, but at a minimum, all pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes. ☐ Yes ☒ No
2. Outfalls, including a unique identification (ID) number assigned by the permittee, and an associated geographic coordinate. ☐ Yes ☒ No
3. Structural stormwater BMPs that are part of the permittee's small MS4. ☒ Yes ☐ No
4. All receiving waters. ☒ Yes ☐ No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

C. Answer **yes** or **no** to indicate whether you have completed the requirements of 2009 Minnesota Session Law, Ch. 172. Sec. 28: with the following inventories, according to the specifications of the Permit (Part III.C.2.a.-b.), including:

1. All ponds within the permittee's jurisdiction that are constructed and operated for purposes of water quality treatment, stormwater detention, and flood control, and that are used for the collection of stormwater via constructed conveyances. ☐ Yes ☒ No
2. All wetlands and lakes, within the permittee's jurisdiction, that collect stormwater via constructed conveyances. ☐ Yes ☒ No

D. Answer **yes** or **no** to indicate whether you have completed the following information for each feature inventoried.

1. A unique identification (ID) number assigned by the permittee. ☒ Yes ☐ No
2. A geographic coordinate. ☐ Yes ☒ No
3. Type of feature (e.g., pond, wetland, or lake). This may be determined by using best professional judgment. ☒ Yes ☐ No

If you have answered **yes** to all above requirements, and you have already submitted the Pond Inventory Form to the MPCA, then you do not need to resubmit the inventory form below.

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

The City will review and revise (as needed) the existing storm sewer inventory to comply with the reissued MS4 permit requirements (Part III.C.1 a-d) and submit the 2009 Pond Inventory to the MPCA within 12 months from the date MS4 permit coverage is extended to the City.

E. Answer **yes** or **no** to indicate if you are attaching your pond, wetland and lake inventory to the MPCA on the form provided on the MPCA website at: http://www.pca.state.mn.us/ms4 , according to the specifications of Permit (Part III.C.2.b.(1)-(3)). Attach with the following file naming convention: *MS4NameHere_inventory*. ☐ Yes ☒ No

If you answered **no,** the inventory form must be submitted to the MPCA MS4 Permit Program within 12 months of the date permit coverage is extended.

V. Minimum Control Measures (MCMs) (Part II.D.5)

A. MCM1: Public education and outreach

1. The Permit requires that, within 12 months of the date permit coverage is extended, existing permittees revise their education and outreach program that focuses on illicit discharge recognition and reporting, as well as other specifically selected stormwater-related issue(s) of high priority to the permittee during this permit term. Describe your **current** educational program, including **any high-priority topics included**:

   "Water at Heart" is the City's stormwater management program which is comprised of numerous components to reduce stormwaer pollution. The City website is primarily used for public education and outreach, and the City's Stormwater Committee for public participation.The City plans to update the existing BMPs and implement public education information of two high priority topics (Lake Winona TMDL and illicit discharge recognition and reporting.

2. List the categories of BMPs that address your public education and outreach program, including the distribution of educational materials and a program implementation plan. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the U.S. Environmental Protection Agency's (EPA) *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf).

   If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Printed Brochures at City Hall	Three different stormwater related brochures will be available at City Hall. City staff will annually record the number of brochures distributed, review the appropriateness of the existing brochures, and provide new brochures for existing topics or high priority topics of interest (at the discretion of City staff).
City Building Department Newsletter & Bulletin Board	One stormwater related article will be included with a Building Department newsletter and displayed on the 'Contractor's Corner' Bulletin Board at City Hall each calendar year of the MS4 permit cycle.
"Water at Heart" Stormwater Webpage	The City will provide three different stormwater related brochures on the Stormwater webpage. City staff will review the content and appropriateness of all materials on the webpage a minimum of once per calendar year of the MS4 permit cycle.

BMP categories to be implemented	Measurable goals and timeframes
Webpage updates (high priority topics)	The City's stormwater webpage will be updated with high priority topics, such as Illicit discharge recognition/reporting and the Lake Winona TMDL information in 2014. Periodic webpage updates will be completed throughout each year of the MS4 permit cycle.
Annual SWPPP Assessment & Annual Reporting	City staff will conduct an annual SWPPP assessment in preparation of each annual report. Proposed SWPPP modifications are subject to Part II.G of the MS4 permit. City staff will submit the annual report to the MPCA prior to June 30th for the previous calendar year.

3. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

   Karin Tank, Assistant Planner

B. MCM2: Public participation and involvement

1. The Permit (Part III.D.2.a.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement a public participation/involvement program to solicit public input on the SWPPP. Describe your current program:

   The City established a Stormwater Committee consisting of volunteers that meet monthly to discuss, review, and provide

recommendations to the City Council on Stormwater related projects and topics within the City. The Committee also reviews each MS4 annual report and hosts the annual public meeting. City staff also participates in the Community Eco-Fair, where stormwater educational materials are provided to the public.

2. List the categories of BMPs that address your public participation/involvement program, including solicitation and documentation of public input on the SWPPP. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Annual Public Meeting	Present the draft MS4 annual report to the City Stormwater Committee and solicit public input. Hold one meeting per calendar year of the MS4 permit cycle.
Community Eco-Fair Exhibitor	Annually provide a minimum of two educational materials at each Community Eco-Fair. City staff will annually record the number of materials distributed at each event.
Stormwater Committee & City Council Meetings	The City will continue to periodically solicit public participation and provide regular operational support for each Committee meeting and event. Public input received (oral and written) will be recorded in meeting minutes and evaluated by the City's MS4 General Contact. City responses (if relevant) will be made in writing to each commenter.

BMP categories to be implemented	Measurable goals and timeframes
None	N/A

3. Do you have a process for receiving and documenting citizen input? ☒ Yes ☐ No

   If you answered **no** to the above permit requirement, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

4. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

   Karin Tank, Assistant Planner

C. MCM 3: Illicit discharge detection and elimination

1. The Permit (Part III.D.3.) requires that, within 12 months of the date permit coverage is extended, existing permittees revise their current program as necessary, and continue to implement and enforce a program to detect and eliminate illicit discharges into the small MS4. Describe your current program:

   THe CIty's IDDE program was initiated with the training of three public works staff (February 23, 2010) and installation of the IDDE database and GIS based mapping on August 6, 2010.

2. Does your Illicit Discharge Detection and Elimination Program meet the following requirements, as found in the Permit (Part III.D.3.c.-g.)?

   a. Incorporation of illicit discharge detection into all inspection and maintenance activities conducted under the Permit (Part III.D.6.e.-f.)Where feasible, illicit discharge inspections shall be conducted during dry-weather conditions (e.g., periods of 72 or more hours of no precipitation). ☒ Yes ☐ No

   b. Detecting and tracking the source of illicit discharges using visual inspections. The permittee may also include use of mobile cameras, collecting and analyzing water samples, and/or other detailed procedures that may be effective investigative tools. ☒ Yes ☐ No

   c. Training of all field staff, in accordance with the requirements of the Permit (Part III.D.6.g.(2)), in illicit discharge recognition (including conditions which could cause illicit discharges), and reporting illicit discharges for further investigation. ☒ Yes ☐ No

   d. Identification of priority areas likely to have illicit discharges, including at a minimum, evaluating land use associated with business/industrial activities, areas where illicit discharges have been identified in the past, and areas with storage of large quantities of significant materials that could result in an illicit discharge. ☐ Yes ☒ No

   e. Procedures for the timely response to known, suspected, and reported illicit discharges. ☐ Yes ☒ No

   f. Procedures for investigating, locating, and eliminating the source of illicit discharges. ☒ Yes ☐ No

g. Procedures for responding to spills, including emergency response procedures to prevent spills from entering the small MS4. The procedures shall also include the immediate notification of the Minnesota Department of Public Safety Duty Officer, if the source of the illicit discharge is a spill or leak as defined in Minn. Stat. § 115.061. ☐ Yes ☒ No

h. When the source of the illicit discharge is found, the permittee shall use the ERPs required by the Permit (Part III.B.) to eliminate the illicit discharge and require any needed corrective action(s). ☐ Yes ☒ No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

The City's IDDE program will be revised to include a map of high priority areas (based on current landuse, history of discharges, and active NPDES Industrial Stormwater permits), internal procedures for emergency response to reported spills/discharges, and enforcement response procedures (including corrective actions). Draft revisions will be completed in 2014 and implemented within 12 months from the date MS4 permit coverage is extended to the City.

3. List the categories of BMPs that address your illicit discharge, detection and elimination program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf).

If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
IDDE Inspections	Annually conduct IDDE inspections concurrently with stormsewer, outfall, and ponds inspections per the 2010 IDDE program

BMP categories to be implemented	Measurable goals and timeframes
IDDE Priority Inspection Map	Develop IDDE inspection map in 2014. Utilize map for inspections within 12 months from the date MS4 permit coverage is extended.
SOPs for Emergency Response	Draft standard operating procedures for emergency response to non-stormwater spills and discharges in 2014. Implement final SOP within 12 months from the date MS4 permit coverage is extended.
Enforcement Response Procedures for Illicit Discharges	Develop ERP concurrently with the draft Illicit Discharge Ordinance in 2014 and formally adopt within 12 months from the date MS4 permit coverage is extended.

4. Do you have procedures for record-keeping within your Illicit Discharge Detection and Elimination (IDDE) program as specified within the Permit (Part III.D.3.h.)? ☒ Yes ☐ No

If you answered **no**, indicate how you will develop procedures for record-keeping of your Illicit Discharge, Detection and Elimination Program, within 12 months of the date permit coverage is extended:

5. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

Dane Bosl, Street Department Superintendent

D. MCM 4: Construction site stormwater runoff control

1. The Permit (Part III.D.4) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a construction site stormwater runoff control program. Describe your current program:

The City requires an erosion control permit for construction sites that disturb one-half acre or more. City ordinance 622 defines requirements for construction stormwater permit approval. Building Department staff conduct plan reviews of projects proposing up to 2-dwelling home sites, perform regular site inspections on all permitted residential and commercial sites, and receive public complaints of potential non-compliance. The City Engineer provides plan review of commercial sites, single family developments (greater than 2 dwellings), and City projects. Inspection services of City projects are provided by the City Engineer.

2. Does your program address the following BMPs for construction stormwater erosion and sediment control as required in the Permit (Part III.D.4.b.):

a. Have you established written procedures for site plan reviews that you conduct prior to the start of ☒ Yes ☐ No

construction activity?

b. Does the site plan review procedure include notification to owners and operators proposing construction activity that they need to apply for and obtain coverage under the MPCA's general permit to *Discharge Stormwater Associated with Construction Activity No. MN R100001*? ☒ Yes ☐ No

c. Does your program include written procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted by the public to the permittee? ☐ Yes ☒ No

d. Have you included written procedures for the following aspects of site inspections to determine compliance with your regulatory mechanism(s):

   1) Does your program include procedures for identifying priority sites for inspection? ☒ Yes ☐ No

   2) Does your program identify a frequency at which you will conduct construction site inspections? ☒ Yes ☐ No

   3) Does your program identify the names of individual(s) or position titles of those responsible for conducting construction site inspections? ☒ Yes ☐ No

   4) Does your program include a checklist or other written means to document construction site inspections when determining compliance? ☒ Yes ☐ No

e. Does your program document and retain construction project name, location, total acreage to be disturbed, and owner/operator information? ☒ Yes ☐ No

f. Does your program document stormwater-related comments and/or supporting information used to determine project approval or denial? ☒ Yes ☐ No

g. Does your program retain construction site inspection checklists or other written materials used to document site inspections? ☒ Yes ☐ No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

The City will add contact information on the stormwater website for the public to provide complaints regarding non-compliance of construction sites. Reciept and consideration of non-compliance will be forward to the City Building Deparetment for review and appropriate follow-up as define under Subd. 5-11 of City ordiance 622.

3. List the categories of BMPs that address your construction site stormwater runoff control program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	**Measurable goals and timeframes**
City Stormwater Permit	Continue to implement as defined by City Ordinance No. 622
Employee Training	Building Department staff (a minimum of one staff member) will maintain valid certification in NPDES Construction Stormwater Permit related training per NPDES-CSW training requirements.

BMP categories to be implemented	**Measurable goals and timeframes**
Stormwater Webpage updates	The City will update the construction stormwater section of the stormwater webpage to include city contact information for the construction site non-compliance. This update will occur within 12 months from the date MS4 permit coverage is extended.
Update Building Dept. inspection checklist	The City will update the existing Erosion and sediment control checklist to meet current NPDES Construction Stormwater Permit requirements. This update will occur in 2014 and be implemented within 12 months from the date MS4 permit coverage is extended.
Revise Building Dept. plan review checklist	Revise the Building Department's plan review checklist for single family dwellings to include specific erosion and sediment control standards.

4. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

   Lynn Timm, Building Inspector

E. MCM 5: Post-construction stormwater management

1. The Permit (Part III.D.5.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a post-construction stormwater management program. Describe your current program:

   The Post-Construction Stormwater Management BMPs are primarily described in ordinance 656. These BMPs include a required Stormwater Permit for land disturbance of one half acre or larger), plan submittals and City review procedures, design standards for permanent facilities, inspection, enforcement, and developer agreements for long-term operation and maintenance of permanent facilities.

2. Have you established written procedures for site plan reviews that you will conduct prior to the start of construction activity? ☒ Yes ☐ No

3. Answer **yes** or **no** to indicate whether you have the following listed procedures for documentation of post-construction stormwater management according to the specifications of Permit (Part III.D.5.c.):
   a. Any supporting documentation that you use to determine compliance with the Permit (Part III.D.5.a), including the project name, location, owner and operator of the construction activity, any checklists used for conducting site plan reviews, and any calculations used to determine compliance? ☒ Yes ☐ No
   b. All supporting documentation associated with mitigation projects that you authorize? ☒ Yes ☐ No
   c. Payments received and used in accordance with Permit (Part III.D.5.a.(4)(f))? ☒ Yes ☐ No
   d. All legal mechanisms drafted in accordance with the Permit (Part III.D.5.a.(5)), including date(s) of the agreement(s) and names of all responsible parties involved? ☒ Yes ☐ No

   If you answered **no** to any of the above permit requirements, describe the steps that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

4. List the categories of BMPs that address your post-construction stormwater management program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
City Stormwater Management Permits	The City will continue to review and issue stormwater permits (for land disturbance of one half acre and larger), through the end of the MS4 permit cycle (July 31, 2018).

BMP categories to be implemented	Measurable goals and timeframes
Updated City Ordinance 656	City ordinance No. 656 will be revised to include the new MS4 regulatory standards, consisting of treatment requirements, definitions of prohibited use (infiltration techniques), and expanded language for regional stormwater systems. The final ordinance language will be formally adopted and implemented within 12 months from the date MS4 permit coverage is extended to the City

5. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

   City Engineer

F. MCM 6: Pollution prevention/good housekeeping for municipal operations

1. The Permit (Part III.D.6.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement an operations and maintenance program that prevents or reduces the discharge of pollutants from the permittee owned/operated facilities and operations to the small MS4. Describe your current program:

   The City's Public Works Department is primarily responsible for all MCM 6 activities. Current Public Works activities include inspections and maintenance of the stormsewer system, street sweeping, regular erosion and sediment control inspections of City permitted building sites (2-dwellings and less), and employee training. In 2014, the City intends to expand the employee training opportunities, refine all record keeping procedures of inspections and maintenance, and

written procedures for IDDE.

2. Do you have a facilities inventory as outlined in the Permit (Part III.D.6.a.)? ☐ Yes ☒ No

3. If you answered **no** to the above permit requirement in question 2, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

   City staff will conduct a facility inspection within 12 months of the date permit coverage is extended to the City.

4. List the categories of BMPs that address your pollution prevention/good housekeeping for municipal operations program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

   Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. For an explanation of measurable goals, refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (http://www.epa.gov/npdes/pubs/measurablegoals.pdf).

   If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	**Measurable goals and timeframes**
Street Sweeping Policy	Conduct street sweeping operations of all public streets a minimum of twice annually. Record the sweeping route and date per occurrence. Review and revise (as needed) the street sweeping policy, stormwater quality areas, and routes annually through the end of the MS4 permit cycle (July 31, 2018
Structural Pollution Control Device (SPCD) Inspections	Continue to inspect 100% of all SPCD's each year of the MS4 permit cycle (July 31, 2018)
Inspect MS4 Outfalls and Ponds	Continue to inspect a minimum of 20% of all MS4 outfalls each year, until 100% of all MS4 Outfalls and Ponds have been inspected within the MS4 permit cycle (July 31, 2018)
Review inspection reports	Annually, evaluate inspection frequency, record keeping, and determine if maintenance, repair, or replacement is needed.
Employee Training	Annually for new and current applicable staff

BMP categories to be implemented	**Measurable goals and timeframes**
Pond Sediment Excavation and Removal Projects	The City will develop a reporting component for pond sediment removal projects. Reporting will document the date, pond ID, project limits/construction plans, volume of sediment removed, test results (if any), and disposal location.
Stockpiles, Storage and Material Handling Area Inspections	Conduct quarterly inspections of all stockpile, storage and material handling areas (per the 2014 facility inventory), through the end of the MS4 permit cycle (July 31, 2018).
Update Public Works MS4 Program	Update existing BMPs to coincide with new/revised MS4 permit requirements (refer to question #9).

5. Does discharge from your MS4 affect a Source Water Protection Area (Permit Part III.D.6.c.)? ☒ Yes ☐ No

   a. If **no**, continue to 6.

   b. If **yes**, the Minnesota Department of Health (MDH) is in the process of mapping the following items. Maps are available at http://www.health.state.mn.us/divs/eh/water/swp/maps/index.htm. Is a map including the following items available for your MS4:

      1) Wells and source waters for drinking water supply management areas identified as vulnerable under Minn. R. 4720.5205, 4720.5210, and 4720.5330? ☒ Yes ☐ No

      2) Source water protection areas for surface intakes identified in the source water assessments conducted by or for the Minnesota Department of Health under the federal Safe Drinking Water Act, U.S.C. §§ 300j – 13? ☒ Yes ☐ No

   c. Have you developed and implemented BMPs to protect any of the above drinking water sources? ☐ Yes ☒ No

6. Have you developed procedures and a schedule for the purpose of determining the TSS and TP treatment effectiveness of all permittee owned/operated ponds constructed and used for the collection and treatment of stormwater, according to the Permit (Part III.D.6.d.)? ☐ Yes ☒ No

7. Do you have inspection procedures that meet the requirements of the Permit (Part III.D.6.e.(1)-(3)) for structural stormwater BMPs, ponds and outfalls, and stockpile, storage and material handling areas? ☐ Yes ☒ No

8. Have you developed and implemented a stormwater management training program commensurate with each employee's job duties that:

   a. Addresses the importance of protecting water quality? ☒ Yes ☐ No

   b. Covers the requirements of the permit relevant to the duties of the employee? ☐ Yes ☒ No

   c. Includes a schedule that establishes initial training for new and/or seasonal employees and recurring training intervals for existing employees to address changes in procedures, practices, techniques, or requirements? ☐ Yes ☒ No

9. Do you keep documentation of inspections, maintenance, and training as required by the Permit (Part III.D.6.h.(1)-(5))? ☐ Yes ☒ No

   If you answered **no** to any of the above permit requirements listed in **Questions 5 – 9**, then describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

   The City will update written procedures for conducting inspections of illicit discharge detection, outfalls, ponds and structural pollution control devices, develop BMPs to protect drinking water sources, a reporting method for employee training events and pond testing procedures and schedules within 12 months of the date permit coverage is extended to the City.

10. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

    Dane Bosl, Street Department Superintendent

VI. Compliance Schedule for an Approved Total Maximum Daily Load (TMDL) with an Applicable Waste Load Allocation (WLA) (Part II.D.6.)

A. Do you have an approved TMDL with a Waste Load Allocation (WLA) prior to the effective date of the Permit? ☐ Yes ☒ No

   1. If **no**, continue to section VII.

   2. If **yes**, fill out and attach the MS4 Permit TMDL Attachment Spreadsheet with the following naming convention: *MS4NameHere_TMDL*.

      This form is found on the MPCA MS4 website: http://www.pca.state.mn.us/ms4.

VII. Alum or Ferric Chloride Phosphorus Treatment Systems (Part II.D.7.)

A. Do you own and/or operate any Alum or Ferric Chloride Phosphorus Treatment Systems which are regulated by this Permit (Part III.F.)? ☐ Yes ☒ No

   1. If **no**, this section requires no further information.

   2. If **yes**, you own and/or operate an Alum or Ferric Chloride Phosphorus Treatment System within your small MS4, then you must submit the Alum or Ferric Chloride Phosphorus Treatment Systems Form supplement to this document, with the following naming convention: *MS4NameHere_TreatmentSystem*.

      This form is found on the MPCA MS4 website: http://www.pca.state.mn.us/ms4.

VIII. Add any Additional Comments to Describe Your Program

Section II.
Stormwater Pollution Prevention Program

2015 MS4 Organizational Chart

City of Alexandria SWPPP

Easy To Get To. Hard To Leave.

Martin Schultz
City Administrator, MS4 Operator/SWPPP Administrator

Lynn Timm
Building Official
- MCM 3, MCM 4
- 3-E, 4-B, 4-C, 4-D

Tim Schoonhoven
City Engineer
- MCM 5
- 2-B, 2-C, 3-A, 3-B, 3-C, 3-D, 3-G, 4-A, 4-F, 4-H, 5-A, 5-B, 5-C, 5-E, 6-D, 6-G, 6-J, 6-K, 7-A

Karin Tank
Assistant City Administrator/ HR Director
- MCM 1, MCM 2
- 1-A, 1-B, 1-C, 2-A, 5-D

Dane Bosl
Street Maintenance Supervisor
- MCM 6
- 3-E, 3-F, 4-E, 4-G, 6-A, 6-B, 6-C, 6-E, 6-F, 6-H, 6-I

STORMWATER MANAGEMENT IMPLEMENTATION PLAN																					
									Proposed Expenses for Year[1, 2]												
No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	Responsible Position	10 Year Cost Estimate[1]	Funding Sources	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Comments
1-A	Education Program: The City or its designee will raise awareness to the audience involved by providing information on stormwater pollution prevention, effects of illicit discharges, best management practices, components of the SWPPP and outside entity resources available to City residents and business owners.	✓	✓	✓	✓	Public Works (KARIN)		Stormwater Utility											
1-B	City Website - The City updates their web page by providing information on high priority stormwater pollution prevention topics and effects of illicit discharge to City residents and business owners. The goal will be to add new material as it becomes available and record the number of website hits annually.	✓		✓		Public Works (KARIN)		Stormwater Utility											
1-C	Coordination of Education Program - The City will collaborate and coordinate the development and implementation of the City's educational activities schedule with the County and SWCD.	✓	✓	✓		Public Works (KARIN)		Stormwater Utility											
2-A	Comply with Public Notice Requirements - Provide public notice of meeting to provide input on the SWPPP in accordance with City public hearing notification requirements.	✓		✓		Engineering (KARIN)		Stormwater Utility											
2-B	Annual Meeting - Hold annual public meeting combined with City Council Meeting or other public participation/involvement event to solicit public input on the SWPPP, discuss its effectiveness, or amendments. Explore new venues and enhance meeting effectiveness and participation. Effectiveness will be evaluated based upon the amount of resident feedback received.	✓	✓	✓		Engineering		Stormwater Utility											
2-C	Public Input Consideration and Response Procedures - City staff will respond to all public comments and statements received from the public meeting, and document any proposed changes to the SWPPP for final approval by the City Engineer (if applicable). The goal of this BMP will be met by documenting all written and oral input into the record of decision and submitted in conjunction with the annual report to the MPCA.	✓	✓	✓		Engineering		Stormwater Utility											
3-A	Storm Sewer System Mapping - Update storm sewer map to meet the requirements of Part II.D.4. of the MS4 General Permit. Identify outfalls, including unique identification (ID) number assigned by the permittee, and an associated geographic coordinate. Update pond inventory and submit to MPCA.	✓	✓	✓		Engineering		Stormwater Utility											
3-B	Illicit Discharge Detection and Elimination (IDDE) and Enforcement Ordinance/Rules - Review ordinance annually to ensure that ordinance continues to meet the needs of the City and legal requirements.	✓	✓	✓		Engineering		Stormwater Utility											
3-C	Illicit Discharge Detection and Elimination (IDDE) Program - Develop written program and implement it as defined in City SWPPP to meet requirements of Part III.D.3.c.h. of the MS4 General Permit. Include procedures to meet permit requirements for the following items: -Inform Public about illicit discharges -Employee Training Program (maintain 2 annual training events in spring and fall) -IDDE Inspections -IDDE Investigations and elimination	✓	✓	✓	✓	Engineering		Stormwater Utility											

No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	Responsible Position	10 Year Cost Estimate[1]	Funding Sources	Proposed Expenses for Year[1, 2]										Comments
									2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
3-D	IDDE Program Updates - Develop written procedures for illicit discharge inspections, investigations, and response actions. Develop a process to document information as described in the Permit (Part III.3.h.) within 12 months following the date permit coverage is extended.	✓	✓	✓	✓	Engineering		Stormwater Utility											
3-E	Illicit Discharge Inspections - In year 1, the City will map out areas that are identified as high-priority outfalls and around high-risk establishments (fast food restaurants, dumpsters, car washes, mechanics, and oil changes). In years 2-5, the City will integrate those sites into its annual MS4 inspection activities.	✓	✓	✓	✓	Street Dept / Building		Stormwater Utility											
3-F	Illicit Discharge Investigation - As needed, City staff or a consultant will be used to televise a section of the sewer system, collect grab samples or perform other effective testing procedures to find illicit connection identified in the system.	✓	✓	✓	✓	Public Works		Stormwater Utility											
3-G	Standard Operating Procedures (SOPs) - Develop SOPs for IDDE within 12 months of the date of permit coverage	✓	✓	✓		Engineering		Stormwater Utility											
4-A	Construction Site Stormwater Runoff Ordinance - Review the recently updated ordinance to ensure it meets the requirements of Part III.D.4.a.(1)-(8) of the MS4 General Permit and that it is at least as stringent as the MPCA general permit to Discharge Stormwater Associated with Construction Activity.	✓	✓	✓		Public Works (ENGINEERING)		Stormwater Utility											
4-B	Construction Site Implementation of Erosion and Sediment Control BMPs - Review and evaluate the efficacy of construction site erosion control plans through regular (weekly to monthly) inspections for construction sites to ensure compliance with City ordinances. Document all inspections and enforcement actions (public and private) and keep on file at City.	✓		✓		Public Works		Stormwater Utility, Developer's Agreement											
4-C	Construction Site Plan Review - The City will require every applicant for a building permit, to meet the requirements for erosion and sediment control for the applicant's project.	✓		✓		Public Works		Stormwater Utility, Developer's Agreement											
4-D	Receipt and Consideration of Non-Compliance for Construction Site Stormwater Controls - The City will establish a procedure for the public to repot potential construction site erosion control and waste disposal infractions. The goal of this BMP will be achieved by completing the timeline/implementation.	✓	✓	✓		Public Works		Stormwater Utility											
4-E	Stormwater Compliance Inspections - Develop written procedures, checklist and responsible persons to ensure that at least 10% of inspections conducted annually are performed at deemed high priority inspection sites (e.g., near sensitive receiving waters, projects larger than 5 acres).	✓	✓	✓		Environmental (BILL)		Stormwater Utility, Developer's Agreement											
4-F	Standard Operating Procedures (SOPs) - Complete an annual review of SOPs for site inspections and site plan reviews by evaluating checklists and existing guidelines to ensure they are up-to-date to reflect MPCA's current construction general permit requirements.	✓	✓	✓		Public Works (ENGINEERING)		Stormwater Utility											
4-G	Prioritize Inspections - The City will develop a process to determine the frequency for inspecting high priority inspection sites (e.g. near sensitive receiving waters, projects larger than 5 acres).	✓	✓	✓		Public Works		Stormwater Utility											

No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	Responsible Position	10 Year Cost Estimate[1]	Funding Sources	Proposed Expenses for Year[1, 2]										Comments
									2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
4-H	Permit Application System - Develop procedures to integrate construction site stormwater runoff review and inspection documents into permit tracking program.	✓	✓	✓		Engineering		Stormwater Utility											
5-A	Site Plan Review Program - The City will review and revise (if necessary, during the plan review process) permanent BMP designs and criteria for post-construction stormwater management associated with new development and redevelopment projects of one acre or more. The City will also actively look for non-structural opportunities where prudent and feasible. The goal of this BMP will be met if the City conducts plan reviews on new development and redevelopment projects of one acre or more.	✓	✓	✓	✓	Engineering and Planning (ENGINEERING)		Stormwater Utility											
5-B	Update Ordinance to Meet New Permit Requirements - Complete Ordinance updates for post-construction runoff from new development and redevelopment within 12 months of extension of permit coverage.	✓	✓	✓		Deputy Director (ENGINEERING)		Stormwater Utility											
5-C	SOPs - In addition to existing stormwater management design guidelines and standards the City will develop SOPs within 12 months of the date of permit coverage to strengthen Post Construction Stormwater Management.	✓	✓	✓		Engineering		Stormwater Utility											
5-D	Document Pertinent Project Information - Maintain all related documents pertaining to each new or redevelopment project in more user-friendly filing system for better records management. Implement within 12 months of the date of permit coverage.	✓	✓	✓		Engineering (COMMUNITY DEVELOP)		Stormwater Utility											
5-E	Comprehensive Stormwater Management Plan: Implement the stormwater management and maintenance programs outlined in the Comprehensive Stormwater Management Plan (SWMP).		✓	✓	✓	Engineering and Planning		Stormwater Utility											
6-A	Parking Lots & Street Cleaning - Sweep City maintained streets 2 times per year	✓		✓		Street Maintenance		Stormwater Utility											
6-B	Storm Sewer Inspection Program - Conduct one inspection of all City-owned ponds and outfalls prior to expiration date of the MS4 General Permit. Annually inspect of 100% of structural pollution control devices.	✓	✓	✓		Street Maintenance		Stormwater Utility											
6-C	Inspection of All Exposed Stockpile, Storage and Material Handling Areas - Based on storm sewer inspection findings determine if repair, replacement, or maintenance measures are necessary to ensure structures proper function and treatment effectiveness. Document annually number or structures repaired or scheduled for maintenance.	✓	✓	✓		Street Maintenance		Stormwater Utility											
6-D	Structural Stormwater BMP Maintenance Program - Develop written program to utilize results from storm sewer inspection findings to determine if repair, replacement, or maintenance measures are necessary to ensure structures proper function and treatment effectiveness. Document annually number or structures repaired or scheduled for maintenance. Annually inspect 20% of known public outfalls, sediment basins and ponds each year on a rotating basis	✓	✓	✓		Engineering		Stormwater Utility											

No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	Responsible Position	10 Year Cost Estimate[1]	Funding Sources	Proposed Expenses for Year[1, 2]										Comments
									2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
6-E	Asset Management System for Record Reporting and Retention - The City will retain all records of inspection, maintenance, and corrective actions of the City's stormwater system. The goal of this BMP will be met if the City retains these records for a period of three years past the expiration of this permit.	✓		✓	✓	IT (BILL)		Stormwater Utility											
6-F	Evaluation of Inspection Frequency - Develop written procedures to modify the frequency of inspections, if after two years of inspections patterns develop warranting a reduction or increase in the frequency of inspection.	✓		✓		Public Works		Stormwater Utility											
6-G	Evaluation of Proposed Stormwater Infiltration Projects for Impacts on Source Water - The City will prohibit the construction of the infiltration area or incorporate specific BMPs to reduce pollutants from infiltrating within vulnerable DWSMA's.	✓		✓	✓	Public Works (ENGINEERING)		Stormwater Utility											
6-H	Stormwater Systems Maintenance Training Program - Training focused on parking lot and street cleaning, storm drain systems cleaning, road salt materials management.	✓	✓	✓	✓	Public Works		Stormwater Utility											
6-I	Spill Prevention & Control Plans for Municipal Facilities - Ensure that plans describing spill prevention and control procedures are consistent among all departments. Conduct annual spill prevention and response training sessions to all municipal employees. Distribute education materials to each municipal facility by the end of year 2.	✓	✓	✓		Environmental (BILL)		Stormwater Utility											
6-J	Facility Inventory - Develop facilities inventory to include potential pollutants at each site. Create a map of all identified facilities.	✓	✓	✓		Environmental (ENGINEERING)		Stormwater Utility											
6-K	Pond Assessment Procedures & Schedule - In year 1, develop procedures for determining TSS and TP treatment effectiveness of city owned ponds use for treatment of stormwater. Implement schedule in year 2-5.	✓	✓	✓	✓	Engineering		Stormwater Utility											
7-A	TMDL Review & Implementation - Alexandria will work cooperatively with the Minnesota Pollution Control Agency and other outside organizations to develop and implement all future TMDL implementation plan(s) for impaired waters designated under Section 303(d), receiving MS4 discharges from within or adjacent to the City.	✓	✓	✓	✓	Engineering		Stormwater Utility, Grant Funds											
						TOTAL													

[1] Cost estimates are preliminary and subject to review and revision as projects are thoroughly reviewed and engineer's reports are completed. Table reflects 2013 costs and do not account for inflation.

✓ Indicates significant revisions to the program required

✓ Indicates moderate revisions to the program required

✓ Indicates minor revisions to the program required

[2] Black Cost - Annual Cost Defined on 2006 SWPPP Summary Sheets

Red Cost - Annual Cost Estimated by WSB for staff approval

BMP PAGE

Implementation Table

Unique Identifying Number: 1-A

Permit Requirements Addressed by this BMP:

Part III.D.1	Part III.D.1	Part III.D.1	Part III.D.1	Part III.D.1		

BMP Title: Education Program

BMP Description:

The City or its designee will raise awareness to the audience involved by providing information on stormwater pollution prevention, effects of illicit discharges, best management practices, components of the SWPPP and outside entity resources available to City residents and business owners.

Measurable Goals:

The City will document the number of publications and households served by publication.
The effectiveness of this BMP will be measured by the number of articles and brochures published in the newspaper, and distributed via City mailings/website and workshops. Success of this BMP is defined as developing then implementing the educational activities schedule and displaying three different stormwater related brochures at City hall, and one stormwater related article in the "Contractors Corner" bulletin.

Responsible Person:

Name:	Karin Tank
Title:	Asst. City Administrator
Phone:	320-759-3647
Email:	ktank@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 1-B

Permit Requirements Addressed by this BMP:

Part III.D.1	Part III.D.1	Part III.D.1	Part III.D.1	Part III.D.1		

BMP Title: City Website

BMP Description:

The City updates their web page by providing information on high priority stormwater pollution prevention topics and effects of illicit discharge to City residents and business owners, as well as information on the current TMDLs assigned to the City. The goal will be to add three different stormwater related materials on the stormwater page and record the number of website hits annually.

Measurable Goals:

Track website hits to the stormwater documents available. Track the comments left by community members about the stormwater program. Track the number of stormwater related information posted on the stormwater page.

Responsible Person:

Name:	Karin Tank
Title:	Asst. City Administrator
Phone:	320-759-3647
Email:	ktank@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 1-C

Permit Requirements Addressed by this BMP:

Part II.D.1.	Part III.D.1.	Part III.D.1.	Part III.D.1.			

BMP Title: Coordination of Education Program

BMP Description:

The City will collaborate and coordinate the development and implementation of the City's educational activities schedule with Douglas County and the Douglas SWCD.

Measurable Goals:

Track the number of community members who give input and attend the educational activities.

Responsible Person:

Name:	Karin Tank
Title:	Asst. City Administrator
Phone:	320-759-3647
Email:	ktank@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 2-A

Permit Requirements Addressed by this BMP:

Part III.D.2.	Part III.D.2.	Part III.D.2.	Part III.D.2.	Part III.D.2.		

BMP Title: Comply with Public Notice Requirements

BMP Description:

Provide public notice of meeting to provide input on the SWPPP in accordance with City public hearing notification requirements.

Measurable Goals:

Make sure the notice for the public is posted within the acceptable timeframe for public input. The effectiveness of this BMP will be measured by the number of public notices posted.

Responsible Person:

Name:	Karin Tank
Title:	Asst. City Administrator
Phone:	320-759-3647
Email:	ktank@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 2-B

Permit Requirements Addressed by this BMP:

Part III.D.2.	Part III.D.2.	Part III.D.a.	Part III.D.2.	Part III.D.2.		

BMP Title: Annual Meeting

BMP Description:

Hold an annual public meeting combined with a City Council meeting or other public participation/involvement event to solicit public input on the SWPPP, discuss its effectiveness, or make amendments to current SWPPP. Explore new venues and enhance meeting effectiveness and participation.

Measurable Goals:

Document attendance and record minutes at the public meeting, record statements and written comments and document changes made to the SWPPP. Effectiveness will be evaluated based upon the amount of resident feedback is received.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Idenifying Number: 2-C

Permit Requirements Addressed by this BMP:

Part III.D.2	Part III.D.2	Part III.D.2	Part III.D.2	Part III.D.2		

BMP Title: Public Input Consideration and Response Procedures

BMP Description:

The City will conduct a public meeting and host a web page on the City's Storm Water Pollution Prevention Program. City staff will respond to all public comments and statements received from the public meeting, and document any proposed changes to the SWPPP for final approval by the City Engineer (if applicable).

Measurable Goals:

The goal of this BMP will be met by documenting all written and oral input and submitted in conjunction with the annual report to the MPCA.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 3-A

Permit Requirements Addressed by this BMP:

Part II.D.4.	Part III.C.1.	Part III.D.3.	Part III.D.3.			

BMP Title: Storm Sewer System Mapping

BMP Description:

Update storm sewer map to meet the requirements of Part II.D.4. of the MS4 General Permit. Identify outfalls, including unique identification (ID) number assigned by the permittee, and an associated geographic coordinate. Update pond inventory and submit to MPCA.

Measurable Goals:

The effectiveness of this BMP will be defined as mapping all storm sewer conveyances 12" or greater that are owned by the City. The success of this BMP will be measured by annually updating all City owned storm sewer conveyances equal to or greater than 12".

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 3-B

Permit Requirements Addressed by this BMP:

Part III.D.3.	Part III.D.3.	Part III.D.3.				

BMP Title: Illicit Discharge Detection and Elimination (IDDE) and Enforcement Ordinance/Rules

BMP Description:

Review ordinance annually to ensure that ordinance continues to meet the needs of the City and legal requirements. Elements of this ordinance will include, but are not limited to, defining allowable discharges, setting policy as it pertains to violations and penalties, and mitigation requirements.

Measurable Goals:

The effectiveness of this BMP will be measured by the number of enforcement actions issued annually. Success will be defined as the review of existing ordinances or amendments made to the illicit discharge ordinance.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 3-C

Permit Requirements Addressed by this BMP:

Part III.D.3.	Part III.D.3.	Part III.D.3.	Part III.D.3.	Part III.D.3.	Part III.D.3.	

BMP Title: Illicit Discharge Detection and Elimination (IDDE) Program

BMP Description:

Develop written program and implement it as defined in City SWPPP to meet requirements of Part III.D.3.c.h. of the MS4 General Permit. This BMP includes providing information on recycling options, services, and programs within the City. The City will also review the current educational activities undertaken by its staff to eliminate illicit discharges from general City operations.

Measurable Goals:

The City will continue to annually review the educational content of printed literature for adequacy and update as necessary. BMP effectiveness will be measured by the number of calls to the City regarding illegal dumping or illicit discharges. Success will be defined by providing educational material to the City staff a minimum of one time annually.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 3-D

Permit Requirements Addressed by this BMP:

Part III.D.3.	Part III.D.3.	Part III.D.3.	Part III.D.3.	Part III.D.3.		

BMP Title: IDDE Program Updates

BMP Description:

Develop written procedures for illicit discharge inspections, investigations, and response actions. Develop a process to document information as described in the Permit (Part III.3.h.) within 12 months following the date permit coverage is extended. Elements of this ordinance will include, but are not limited to, defining allowable discharges and mitigation requirements.

Measurable Goals:

The effectiveness of this BMP will be measured by the number of enforcements actions issued annually.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 3-E

Permit Requirements Addressed by this BMP:

Part III.D.3.	Part III.D.3.	Part III.D.3.	Part III.D.3.			

BMP Title: Illicit Discharge Inspections

BMP Description:

In year 1, the City will map out areas that are identified as high-priority outfalls and high-risk establishments (fast food restaurants, dumpsters, car washes, mechanics, and oil changes). In years 2-5, the City will integrate those sites into its annual MS4 inspection activities. The City will notify the MPCA state duty officer of any hazardous material spills or discharges.

Measurable Goals:

The effectiveness of this BMP will be measured by annually documenting all reported non-stormwater discharges occurring on City owned land, private property, and right-of-way, as well as any remedial actions taken (if applicable).

Responsible Person:

Name:	Lynn Timm
Title:	Buiding Official
Phone:	320-759-3644
Email:	ltimm@rea-alp.com

Responsible Person:

Name:	Dane Bosl
Title:	Street Maintenance Supervisor
Phone:	320-759-3613
Email:	dbosl@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 3-F

Permit Requirements Addressed by this BMP:

Part III.D.3.	Part III.D.3.	Part III.D.3.	Part III.D.3.			

BMP Title: Illicit Discharge Investigation

BMP Description:

As needed, City staff or a consultant will be used to televise a selection of the sewer system, collect grab samples, or perform other effective testing procedures to find illicit connection identified in the system.

Measurable Goals:

All non-stormwater discharges (as defined in Part III.D.3.f.) were evaluated and determined to be insignificant sources of pollutants to the MS4.

Responsible Person:

Name:	Dane Bosl
Title:	Street Maintenance Supervisor
Phone:	320-759-3613
Email:	dbosl@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 3-G

Permit Requirements Addressed by this BMP:

Part III.A. | Part III.D.3. | Part III.D.3. | Part III.D.3. | Part III.D.3. | Part III.D.3. | Part III.D.3.

BMP Title: Standard Operating Procedures (SOPs)

BMP Description:

Develop SOPs for IDDE within the initial 12 months of the beginning date of permit coverage.

Measurable Goals:

The effectiveness of this BMP and the SOPs for IDDE will be calculated by the amount of regulation enforced as well as the act of maintaining compliance with the NPDES MS4 permit.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 4-A

Permit Requirements Addressed by this BMP:

Part III.D.4.	Part III.D.4.	Part III.D.4.				

BMP Title: Construction Site Stormwater Runoff Ordinance

BMP Description:

Review the City's ordinance to ensure it meets the requirements of Part III.D.4.a.(1)-(8) of the MS4 General Permit and that it is at least as stringent as the MPCA general permit to Discharge Stormwater Associated with Construction Activity.

Measurable Goals:

The City will annually review and update as necessary the City's erosion control ordinances. This BMP effectiveness will be calculated by tracking the compliance issues with construction sites.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 4-B

Permit Requirements Addressed by this BMP:

Part III.D.4.	Part III.D.4.	Part III.D.4.				

BMP Title: Construction Site Implementation of Erosion and Sediment Control BMPs

BMP Description:

Review and evaluate the efficacy of construction site erosion control plans through regular (weekly to monthly) inspections for construction sites to ensure compliance with City ordinances. Document all inspections and enforcement actions (public and private) and keep on file at City. As part of the City's permit approval standards, BMPs must be implemented in accordance with the NPDES permit.

Measurable Goals:

Success of this BMP will be determined by site inspections per NPDES Phase II requirements and City permit approvals.

Responsible Person:

Name:	Lynn Timm
Title:	Buiding Official
Phone:	320-759-3644
Email:	ltimm@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 4-C

Permit Requirements Addressed by this BMP:

Part III.D.4.	Part III.D.4.	Part III.D.4.				

BMP Title: Construction Site Plan Review

BMP Description:

Every applicant for a city permit to allow land disturbing activities is required to submit a project specific stormwater management plan (if applicable) and/or erosion control plan to the City for review and approval. Construction permits will be required to meet MPCA NPDES Phase II guidelines for erosion and sediment control and all applicable City ordinances and codes.

Measurable Goals:

No City permit to allow land disturbing activities shall be issued until approval of a stormwater management plan (if applicable) and/or erosion control plan, or waiver of the approval requirement has been obtained. Success will be defined as enforcing the permit's submittal requirement. Success of this BMP will be the number of land disturbing permits issued by the City annually.

Responsible Person:

Name:	Lynn Timm
Title:	Buiding Official
Phone:	320-759-3644
Email:	ltimm@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 4-D

Permit Requirements Addressed by this BMP:

Part III.D.4.	Part III.D.4.	Part III.D.4.				

BMP Title: Receipt and Consideration of Non-Compliance for Construction Site Stormwater Controls

BMP Description:

The City will establish a phone line and website contact information through which the public may report potential construction site erosion control and waste disposal infractions. Reported incidents will be inspected within 24 hours of receipt or on the next scheduled work day by the City. Hazardous material spills or discharges will be reported to the MPCA State Duty Officer within 24 hours.

Measurable Goals:

The City will establish contact information for receipt of construction site violations. The City will record:
- The number of calls and emails related to SWPPP issues.
- The number of illicit discharge and construction site complaints.
- The number of clean-up activities or SWPPP changes resulting from calls or emails.

Responsible Person:

Name:	Lynn Timm
Title:	Buiding Official
Phone:	320-759-3644
Email:	ltimm@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 4-E

Permit Requirements Addressed by this BMP:

Part III.D.3.	Part III.D.4.	Part III.D.4.	Part III.D.4.	Part III.D.4.		

BMP Title: Stormwater Compliance Inspections

BMP Description:

Construction site operators must conform to all NPDES construction permit standards and City ordinances pertaining to construction site erosion control and waste disposal. Inspection procedures consist of NPDES Phase II inspection requirements and violations reported by the public as defined in BMP Summary Sheets 3-C and 4-E.

Measurable Goals:

The City will begin to annually evaluate the effectiveness of site inspections and enforcement procedures via enforcement actions taken annually. Additional and/or revised procedures will be added (if applicable) when deemed necessary or found non-conforming to NPDES Phase II requirements.

Responsible Person:

Name:	Dane Bosl
Title:	Street Maintenance Supervisor
Phone:	320-759-3613
Email:	dbosl@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 4-F

Permit Requirements Addressed by this BMP:

Part III.A.	Part III.D.4.	Part III.D.4.	Part III.D.4.			

BMP Title: Standard Operating Procedures (SOPs)

BMP Description:

Complete an annual review of SOPs for site inspections and site plan reviews by evaluating checklists and existing guidelines to ensure they are up-to-date to reflect MPCA's current construction general permit requirements.

Measurable Goals:

The effectiveness of this BMP and the SOPs for IDDE will be calculated by the amount of regulation enforced as well as the act of maintaining compliance with the NPDES MS4 permit.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 4-G

Permit Requirements Addressed by this BMP:

Part III.D.4.	Part III.D.4.	Part III.D.4.	Part III.D.4.			

BMP Title: Prioritize Inspections

BMP Description:

The City will develop a process to determine the frequency for inspecting high priority inspection sites (e.g. near sensitive receiving waters, projects larger than 5 acres). The process will be developed onto a city map that calls out these sensitive areas.

Measurable Goals:

The City will begin to annually evaluate the effectiveness of site inspections and enforcement procedures via enforcement actions taken annually. Additional and/or revised procedures will be added (if applicable) when deemed necessary or found non-conforming to NPDES Phase II requirements.

Responsible Person:

Name:	Dane Bosl
Title:	Street Maintenance Supervisor
Phone:	320-759-3613
Email:	dbosl@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 4-H

Permit Requirements Addressed by this BMP:

Part III.D.4	Part III.D.4	Part III.D.4	Part III.D.4	Part III.D.4		

BMP Title: Permit Application System

BMP Description:

Develop procedures to integrate construction site stormwater runoff review and inspection documents into permit tracking program. The documents will help to maintain compliance with the MPCA and the City Code on these construction sites.

Measurable Goals:

The effectiveness of this BMP will be determined by the amount of permits applied for and tracking permits issued.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 5-A

Permit Requirements Addressed by this BMP:

Part III.D.5.	Part III.D.5.	Part III.D.5.	Part III.D.5.	Part III.D.5.		

BMP Title: Site Plan Review Program

BMP Description:

The City will review and revise (if necessary, during the plan review process) permanent BMP designs and criteria for post-construction stormwater management associated with new development and redevelopment projects of one acre or more. The City will also actively look for non-structural opportunities where prudent and feasible.

Measurable Goals:

The goal of this BMP will be met if the City conducts plan reviews on new development and redevelopment projects of one acre or more. Success of this BMP is defined as annually recording all revised BMP designs and implemented structural and non-structural BMPs on City properties.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 5-B

Permit Requirements Addressed by this BMP:

Part III.D.5.	Part III.D.5.	Part III.D.5.	Part III.D.5.	Part III.D.5.	Part III.D.5.	

BMP Title: Update Ordinance to Meet New Permit Requirements

BMP Description:

Complete Ordinance updates for post-construction runoff from new development and redevelopment within 12 months of extension of permit coverage.

Measurable Goals:

The City will annually review and update as necessary the City's post-construction ordinance and permit requirements.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 5-C

Permit Requirements Addressed by this BMP:

Part III.D.5. | Part III.D.5. | Part III.D.5. | Part III.D.5. | Part III.D.5. | Part III.D.5. | Part III.D.5.

BMP Title: Standard Operating Procedures (SOPs)

BMP Description:

In addition to existing stormwater management design guidelines and standards, the City will develop SOPs within the initial 12 months of the date of permit coverage to strengthen Post Construction Stormwater Management.

Measurable Goals:

The effectiveness of this BMP and the SOPs for IDDE will be calculated by the amount of regulation enforced as well as the act of maintaining compliance with the NPDES MS4 permit.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 5-D

Permit Requirements Addressed by this BMP:

Part III.D.5.	Part III.D.5.					

BMP Title: Document Pertinent Project Information

BMP Description:

Maintain all related documents pertaining to each new or redevelopment project in more user-friendly filing system for better records management. Implement within 12 months of the date of permit coverage.

Measurable Goals:

The effectiveness of this BMP will be measured by tracking inspections and maintenance pertaining to public and private post-construction stormwater management BMPs.

Responsible Person:

Name:	Mike Weber
Title:	Community Develop. Director
Phone:	320-759-3626
Email:	mweber@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 5-E

Permit Requirements Addressed by this BMP:

Part III.D.4.	Part III.D.4.	Part III.D.4.				

BMP Title: Comprehensive Stormwater Management Plan

BMP Description:

Implement the stormwater management and maintenance programs outlined in the Comprehensive Stormwater Management Plan (SWMP).

Measurable Goals:

The City will annually review and update the SWMP as necessary.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
Phone:	320-335-5004
Email:	tim.schoonhoven@wsn.us.com

BMP PAGE

Implementation Table

Unique Identifying Number: 6-A

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.				

BMP Title: Parking Lots & Street Cleaning

BMP Description:

The City currently brush or vacuum sweeps City owned streets a minimum of twice per year in an effort to reduce the amount of sediment and trash from reaching the storm sewer system. One street sweeping activity will occur in the spring (April-June) on all streets, and the second activity will occur in the fall (September –November) on selected areas (as determined by the City Administrator).

Measurable Goals:

The City will continue recording the frequency and miles of streets that are annually swept, and quantify the amount of trash/debris removed per sweeping occurrence. Success of this BMP is defined as recording two street sweeping occurrences per year.

Responsible Person:

Name:	Dane Bosl
Title:	Street Maintenance Supervisor
Phone:	320-759-3613
Email:	dbosl@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 6-B

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.				

BMP Title: Storm Sewer Inspection Program

BMP Description:

Conduct one inspection of all City-owned ponds and outfalls prior to expiration date of the MS4 General Permit. Annually inspect of 100% of structural pollution control devices. Newly constructed and rebuild structural pollution control devices will be added to the storm sewer map (BMP summary sheet 3-A) and inspected within one year of post construction.

Measurable Goals:

Maintenance and repair specifications and schedules will be developed and implemented as necessary. Success of this BMP will be defined as annually conducting and documenting inspections, repairs, and maintenance projects of all structural pollution control devices.

Responsible Person:

Name:	Dane Bosl
Title:	Street Maintenance Supervisor
Phone:	320-759-3613
Email:	dbosl@rea-alp.com

BMP PAGE

Implementation Table

Unique Identifying Number: 6-C

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.	Part III.D.6.	Part III.D.6.		

BMP Title: Inspection of All Exposed Stockpiles, Storage, and Material Handling Areas

BMP Description:

City staff will annually locate and inspect all exposed stockpiles and storage/material handling areas on City owned properties. All existing onsite BMP's will be inspected for conformance to NPDES Phase II permit requirements. Any identified erosion control issues will be corrected and documented.

Measurable Goals:

The effectiveness of this BMP will be measured by the frequency of inspections and corrective actions. Success will be defined as locating and inspecting all exposed stockpiles and storage/material handling on City property a minimum of once each year.

Responsible Person:

Name:	Dane Bosl
Title:	Street Maintenance Supervisor
Phone:	320-759-3613
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BMP PAGE

Implementation Table

Unique Identifying Number: 6-D

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.	Part III.D.6.	Part III.D.6.		

BMP Title: Structural Stormwater BMP Maintenance Program

BMP Description:

This program will consist of (at a minimum) training materials and workshops for City staff to help reduce storm water pollution caused from park maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance.

Measurable Goals:

The effectiveness of this BMP will be measured by the number of trainings held and attendance at trainings, and the annual number or structures repaired or scheduled for maintenance.

Responsible Person:

Name:	Tim Schoonhoven
Title:	City Engineer
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BMP PAGE

Implementation Table

Unique Identifying Number: 6-E

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.					

BMP Title: Asset Management System for Record Reporting and Retention

BMP Description:

The City Administrator will retain all records of inspection, maintenance, and corrective actions of the City's storm water system. Records will be available, by request, to the public upon approval by the City Administrator.

Measurable Goals:

The City will record the number of record requests and distributed materials annually. Success will be defined by the City providing the records or materials as requested.

Responsible Person:

Name:	Dane Bosl
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BMP PAGE

Implementation Table

Unique Identifying Number: 6-F

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.	Part III.D.6.			

BMP Title: Evaluation of Inspection Frequency

BMP Description:

The City will retain the records of inspection results and any maintenance performed or recommended. After two years of inspections, if patterns of maintenance become apparent, the frequency of inspections may be adjusted at the discretion of the City's engineering consultant.

Measurable Goals:

The effectiveness of this BMP will be measured by the annual recording of all inspections completed the previous year. Success of this BMP will be defined as annually reviewing the frequency of inspections to the maintenance completed by the City.

Responsible Person:

Name:	Dane Bosl
Title:	Street Maintenance Supervisor
Phone:	320-759-3613
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BMP PAGE

Implementation Table

Unique Identifying Number: 6-G

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.	Part III.D.6.			

BMP Title: Evaluation of Proposed Stormwater Infiltration Projects for Impacts on Source Water

BMP Description:

If the proposed infiltration/discharge is determined by the City to potentially affect the local drinking water supply, the City will prohibit the construction of the infiltration area or incorporate the necessary BMPs to minimize the identified pollutant(s) prior to infiltrating the vulnerable portions of the drinking water supply management areas (DWSMAs).

Measurable Goals:

The effectiveness of this BMP will be measured by the number of BMPs (i.e.: structural BMPs, good housekeeping measures, education, etc.) that are developed and implemented to protect drinking water sources throughout the permit term.

Responsible Person:

Name:	Tim Schoonhoven
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BMP PAGE

Implementation Table

Unique Identifying Number: 6-H

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.				

BMP Title: Stormwater Systems Maintenance Training Program

BMP Description:

Training focused on parking lot and street cleaning, storm drain systems cleaning, road salt materials management.

Measurable Goals:

The effectiveness of this BMP will be measured by City staff annually attending appropriate training sessions throughout the year that focus on stormwater management.

Responsible Person:

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BMP PAGE

Implementation Table

Unique Identifying Number: 6-I

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.	Part III.D.6.			

BMP Title: Spill Prevention & Control Plans for Municipal Facilities

BMP Description:

A spill prevention and control plan effectively reduces the risk of surface and groundwater contamination. However, to be effective, workers must be trained, materials and cleanup equipment available, and procedures followed.

Measurable Goals:

Ensure that plans describing spill prevention and control procedures are consistent among all departments. Conduct annual spill prevention and response training sessions to all municipal employees. Distribute education materials to each municipal facility by the end of year 2.

Responsible Person:

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BMP PAGE

Implementation Table

Unique Identifying Number: 6-J

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.	Part III.D.6.			

BMP Title: Facility Inventory

BMP Description:

The City will develop and maintain an inventory of City-owned facilities that contribute pollutants to stormwater discharges. The inventory will include a map of all identified facilities.

Measurable Goals:

The effectiveness of this BMP will be determined by the reduction of pollutants running off of these sites as well as the usability of the inventory.

Responsible Person:

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BMP PAGE

Implementation Table

Unique Identifying Number: 6-K

Permit Requirements Addressed by this BMP:

Part III.D.6.	Part III.D.6.	Part III.D.6.				

BMP Title: Pond Assessment Procedures & Schedule

BMP Description:

In year 1, develop procedures for determining TSS and TP treatment effectiveness of City owned ponds use for treatment of stormwater. Implement schedule in year 2-5. The schedule (which may exceed this permit term) shall be based on measureable goals and priorities established by the City.

Measurable Goals:

The effectiveness of this BMP will be measured by the reduction of TSS and TP discharge into the stormwater systems. Success of this BMP will be defined as conducting and documenting inspections, repairs, and maintenance to the stormwater ponds.

Responsible Person:

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BMP PAGE

Implementation Table

Unique Identifying Number: 7-A

Permit Requirements Addressed by this BMP:

Part III.E.						

BMP Title: TMDL Review & Implementation

BMP Description:

Alexandria will work cooperatively with the Minnesota Pollution Control Agency and other outside organizations to develop and implement all future TMDL implementation plan(s) for impaired waters designated under Section 303(d), receiving MS4 discharges from within or adjacent to the City.

Measurable Goals:

1. Establish a baseline of information– determine what processes are in place and what has already been accomplished (i.e. TMDL studies underway) that will help meet these permit conditions during this MS4 permit cycle.
2. Prepare a written inventory of all impaired waters within the jurisdictional boundaries of the MS4, as well as those outside these boundaries likely to have an impact as a result of receiving stormwater discharge from the MS4; compile as much detail about the stormwater discharges they receive from the MS4 as is available.
3. Prepare a map that includes all impaired waters that the MS4 discharge may impact, all MS4 discharge points that may impact these water(s), and delineated watershed(s) that may contribute to the impairment.
4. Complete for records a written overview of the conclusions reached through this review, including the decision making process used to determine what SWPPP revisions may be needed.
5. Prepare a projected schedule and timeline to incorporate any necessary changes into the SWPPP.

Responsible Person:

Name:	Tim Schoonhoven
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Section III.
Standard Operating Procedures

Minimum Control Measure 3
Illicit Discharge Detection and Elimination

TABLE OF CONTENTS

MINIMUM CONTROL MEASURE 3

1. INTRODUCTION

1.1 Basis for the Standard Operating Procedures (SOPs)

On August 1, 2013, the Minnesota Pollution Control Agency (MCPA) reissued there National Pollutant Discharge Elimination System (NPDES) General Permit (GP) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). The MS4 GP requires the City of Alexandria to develop written procedures for the purpose of eliminating non-stormwater discharges through the development of an Illicit Discharge Detection and Elimination Program.

This manual not only assists the City in meeting the MS4 permit regulations, but encourages them to use targeted best management practices (BMPs) to prevent the discharge of non-stormwater related discharges. This Standard Operating Procedures Manual will help promote behavior to improve the water quality of the City of Alexandria's lakes, ponds, and creeks.

1.2 Objectives of the SOPs

This manual is intended to provide guidance on Illicit Discharge Detection and Elimination (IDDE) as follows:

- Provide guidance to municipalities regarding commonly found illicit discharges.
- Provide guidance to municipalities for prioritizing areas where illicit discharges are commonly found.
- Provide tools for detecting, tracking, and eliminating illicit discharges.

2. LOCATING PRIORITY AREAS

A map has been provided in Appendix B that identifies potential priority areas for detecting illicit discharges based on land use. The methodology for further establishing priority areas is detailed in **Section 2.1**. The City is recommended to complete the prioritization at least once during each five year permit term.

2.1 Review of Available Information

Activities and Definition

Priority areas for IDDE will vary depending on water quality conditions, land use associated with business or industrial activities, etc. A relatively simple desktop assessment of available community information can provide many clues as to where illicit discharges may be occurring for basing the prioritization.

The definition of illicit discharge includes any discharge to the MS4 storm sewer that is not stormwater including: leaking sanitary sewers or water mains, illegal sewage connections, illegal floor drain connections, seasonal draining of swimming pools (pools

are recommended to be dechlorinated prior to discharge), break-out from failing septic systems, discharge of vehicle/equipment washing into the storm sewer, restaurant discharge including grease, cleaning solution, grass clippings, fertilizer, pesticides, salt, spills and dumping (Appendix A).

Preparation

The following is a list of resources that should be collected and reviewed and a brief description of factors to consider during the prioritization process:

a. Zoning Maps
   Industrial areas with high density development may have a high illicit discharge potential. Also, commercial areas including bars, restaurants, grocery stores, shopping malls, automobile shops, carpet cleaners, ready-mix and bituminous plants, and sand and gravel pits may have high illicit discharge potential.
b. Locations of Previous Illicit Discharges
   Areas with historical illicit discharge reports or previous citizen complaints should be considered high priority.
c. Areas with Storage of Significant Materials
   Areas that have storage of significant materials, including but not limited to: raw materials, fuels, materials such as solvents, detergents and plastic pellets, etc. should be considered high priority.

2.2 Mapping Verification Process

a. Using existing maps as a basis for locations, field personnel should start a mapping verification process by walking all named waterbodies within the City and collecting outfall location and design information using global positioning system (GPS) equipment capable of sub-meter (approximately 3 foot) accuracy. Use of a data logger and data collection software will allow the generation of GIS files that will be useful for many years.
b. Review and field check other structures, catch basins, culverts, pipes, ditches, drain manholes, etc.
c. Collect dry weather inspection information whenever possible. Dry weather discharge information can either be collected on the paper forms for manual entry into a separate database at a later time, or can be directly entered into a database on a laptop or the data logger on-site.

2.3 Detection Process

An Outfall Inspection Form (Appendix D) can be used during mapping. The form should be completed whenever evidence of an illicit discharge is observed such as significant flow during dry weather, the presence of raw sewage indicators, staining, or residue. If the municipality is using paper forms to document inspections, they should complete a Outfall Inspection Form (Appendix D) even if there is no evidence of an illicit discharge.

Long-term, regular inspections of outfalls are a primary part of an effective IDDE program. Regular inspections will not be significantly different from inspections conducted during mapping. The Outfall Inspection Form can be used (Appendix D). The major difference from mapping inspections will be that a crew or inspector will have historical data to work with to make assessments. These inspections can be recorded in an electronic database or paper forms can be kept.

Most public works crews conduct their regular duties in and around the storm drain system. A Program Manager may elect to have crews conduct outfall inspections on a formal basis (actually bringing an inspection form and equipment) while performing other work, or the Program Manager may elect to have crews informally "keep a look out" for illicit discharges. If an employee observes evidence of an illicit discharge during an informal or non-routine inspection, they should collect as much information about the potential illicit discharge as possible then contact their supervisor so that appropriate action can be taken.

It is important to collect as much information as possible at the time of initial observation because of the likelihood that a discharge may be transitory or intermittent. Initial identification of the likely or potential sources of the discharge is also very important.

Once an illicit discharge has been reported or detected through an inspection, the next step is to locate the source. Selection of tracing techniques will depend on the type of illicit discharge detected, the information collected during initial discovery and observation (whether through an inspection by a municipal employee or through a citizen call-in), and the resources/technology available to the municipality. A single technique may be used or several techniques may need to be combined to identify the source of the discharge. The three types of discharges are as follows:

a. Transitory illicit discharges are typically one-time events resulting from spills, breaks, dumping, or accidents. Transitory illicit discharges are often reported to an authority through a citizen complaint line or following observation by a municipal employee during regular duties. Because they are not recurring, they are the most difficult to identify, trace, and remove. The best method to reduce, or eliminate before they occur, transitory discharges is through general public education, education of municipal response personnel, tracking of discharge locations, and enforcement of an illicit discharge ordinance (Appendix F).

b. Intermittent illicit discharges occur occasionally over a period of time (several hours per day, or a few days per year). Intermittent discharges can result from legal connections to the storm drain system, such as a legal sump pump connection that is illegally discharging anything other than groundwater. Intermittent discharges can also result from activities such as drum washing in exterior areas. These types of discharges are less likely to be discovered, and are more difficult to trace and remove, because they generally occur on private

property and require probable cause and/or a search warrant for further investigation. These discharges can have large or small impacts on waterbodies depending on pollutant content and the size of the receiving water body.

c. Continuous illicit discharges are typically the result of a direct connection from a sanitary sewer, overflow from a malfunctioning septic system, inflow from a nearby subsurface sanitary sewer that is malfunctioning, or an illegal connection from a commercial or industrial facility. Continuous illicit discharges are usually easiest to trace and can have the greatest pollutant load (CWP 2004).

The investigative technique used will depend on whether or not a potential source location was identified during the initial observation. Investigative techniques are as follows:

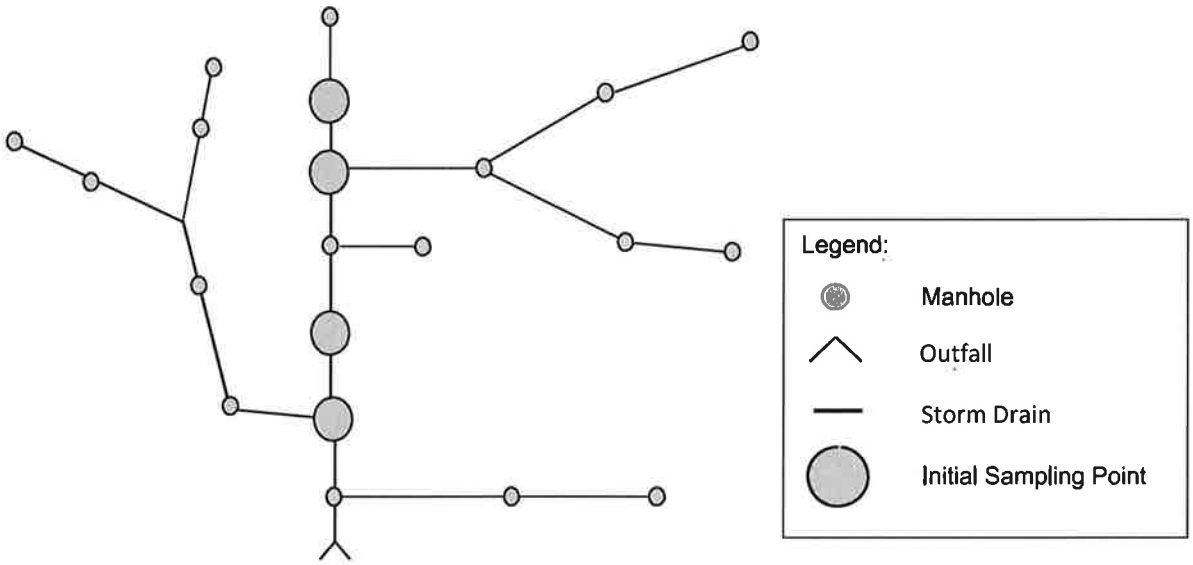
a. Potential source identified: If a potential source for the illicit discharge was initially identified, steps should be taken to investigate the potential source site, such as inspecting the site and storm drain system in the vicinity of the site. If floor drains, sumps, or other suspect discharge locations are observed during this inspection, dye testing, smoke testing, electronic location of subsurface pipes, or televising may be used. These techniques should definitively show whether the suspect site was the source of the illicit discharge.

b. Potential source not identified: If no source site is suspected, and only the general area of the illicit discharge is known, it may be possible to trace the evidence of the illicit discharge by visual inspection of the storm drain access points. If this catch basin/manhole inspection technique is not fruitful, some interim steps could be taken to try to trap water from an intermittent discharge. For example, sand bagging and damming or block testing of selected storm drain access points, combined with installation of an optical brightener trap to assess if detergents are present in a discharge, can help reveal the source of the discharge. If these techniques have no positive result (no water pools behind the weir or sand bag), the discharge was likely transitory (one time only), and it may not be possible to determine its origin. In this case, the location of the originally reported illicit discharge should be added to a regular inspection program to provide for the possibility of future incidents. If the original report of the illicit discharge was severe or gross pollution, then smoke testing or televising of the storm drain system may be warranted.

It is necessary to understand the tracing technique and its limitation in order to select an effective tracing technique. The following is a brief summary of each of the tracing techniques that may be used to locate the source of an illicit discharge:

a. Visual Inspection at manholes/catch basins: This tracing technique is typically used when there is no suspected source site. It is the most cost effective and efficient method of tracing. Structures should be systematically inspected starting at the initial detection location, gradually working upstream through the

system. If the crew is tracking a continuous discharge, the inspections may be relatively easy and the flow can be tracked back to its source. If the crew is attempting to track a transitory or intermittent discharge, the crew should make the following observations depending on the information provided from the initial identification: color and clarity of any discharges; staining or deposits on bottom of structure; oil sheen, scum, or foam on any standing fluids in sump of structure; odors, staining or deposits on inlet pipes and outlet pipes. Depending on what the crew is looking for and what they find, they will progressively inspect additional structures until either a potential source is found, or no further evidence is found. If no further evidence is found, the crew may elect to further assess some of the structures by installing sandbags or other damming devices to determine if the discharge recurs. Crews should use standard safety procedures when conducting these inspections such as cone placement and safety vests in traffic areas, confined space entry techniques (if entry is necessary), steel-toed boots, etc.



b. Sampling flowing discharges: Samples should be collected only in the event a discharge is flowing through the outfall. Stagnant pools of water or sump water should not be sampled. If the municipal staff will be collecting the sample, the staff should be trained in safety and proper collection techniques. Table 1. lists the parameters that a sample may be analyzed for and provides a general discussion of how the results may be interpreted.

Table 1. Threshold Levels for Screening Parameters Used in Illicit Discharge Surveys

Parameter	Threshold	Source
Ammonia	>0.1 mg/L	Brown et al (2004)
E. coli	>235 CFU/100 ml (grab sample)	EPA (1986)
Total coliform	>10,000 CFU/100 ml (grab sample)	California state standard (Dorfman and Rosselot, 2011)
Fluoride	>0.25 mg/L	Brown et al (2004)
Detergents	>0.25 mg/L	Brown et al (2004)
Potassium	>6 ppm	Guidance extrapolated from Lilly and Sturm (2010)

This table was taken from the CWP manual (2004) which provides a more detailed discussion of sampling procedures and analysis of results. Sampling and analysis for many of the compounds should be completed by personnel trained in collection, handling, and preservation techniques to ensure accurate data. Environmental Protection Agency guidance recommends collecting a sample when the discharge is initially found and after any source is removed. The sample collected after removing an illicit discharge can indicate if other illicit discharges are present.

c. Sandbagging or damming: Sandbagging and damming is typically only conducted when the discharge flow has ceased since initial detection. Application of this technique will show whether the discharge is one time only (no water pools behind the sandbag or dam) or intermittent (water pools behind the sandbag). CWP provides the following explanation:

1. This technique involves placement of sandbags or similar barriers such as caulk dams within strategic manholes in the storm drain network to form a temporary dam that collects any intermittent flows that may occur. Any flow collected behind the sandbag is then assessed using visual observations or by indicator sampling. Sandbags are lowered on a rope through the manhole to form a dam along the bottom of the storm drain, taking care not to fully block the pipe (in case it rains before the sandbag is retrieved). Sandbags are typically installed at junctions in the network to eliminate contributing branches from further consideration. If no flow collects behind the sandbag, the upstream pipe network can be ruled out as a source of the intermittent

discharge. Sandbags are typically left in place for no more than 48 hours, and should only be installed when dry weather is forecast. Sandbags should not be left in place during a heavy rainstorm. They may cause a blockage in the storm drain or they may be washed downstream and lost. The biggest downside to sandbagging and damming is that it requires at least two trips to each manhole (CWP 2004, p. 157).

d. Optical brightener monitoring traps: Optical brightener monitoring (OBM) traps can be used to trace intermittent or transitory discharges that result from washwater with detergent. Detergents usually contain optical brighteners that can be detected at high concentrations using this method. However, the traps only detect highly concentrated discharges. The detergent concentration required to be detected by the light is approximately the same as pure washwater from a washing machine. Consequently, OBM traps may be best suited as a simple indicator of the presence or absence of intermittent flow or to detect the most concentrated flows. The traps can be made using easily acquired materials. The traps contain an absorbent, unbleached cotton pad or fabric swatch contained inside a wire mesh trap or section of small diameter (e.g., 2-inch) PVC pipe. The traps should be anchored to the inside of an outfall at the invert using wire or monofilament that is secured to the pipe itself. Rocks or bricks with holes can be used as temporary weights to hold the trap in place.

   Field crews can retrieve the OBM traps after 24 to 72 hours of dry weather. OBM traps need to be retrieved before coming into contact with stormwater, which will contaminate the trap or wash it away. When placed under a long wave fluorescent ultraviolet or "black" light, an OBM trap will indicate if it has been exposed to detergents. CWP reports that OBM traps have been used with some success in Massachusetts (Sargeant et al. 1998) and northern Virginia (Waye 2000). For more detailed guidance on how to use OBM traps and interpret the results, see the Reference section for the studies and guidance manuals cited above.

e. Dye testing: Dye testing is typically conducted when a potential source site has been identified, and the crew is trying to determine whether the site has floor drains or other locations that connect and discharge to the storm drain system. Permission to access the site must be obtained before dye testing can be conducted. Verbal or written requests are both acceptable. The crew should review available sanitary sewer and storm drain maps before conducting the dye testing. The dye testing procedure consists of two steps: (1) discharging the dye into the suspect location, and (2) opening nearby storm drain and sanitary sewer manhole covers to determine where the dye discharges to.

   This procedure is fairly effective for confirming direct connections into the storm drain system for short reaches. If a longer pipe network is being evaluated, charcoal packets can be left in selected structures and later collected and analyzed for the presence of the dye. If dye testing on porcelain structures, tablets

or charcoal should be wrapped in tissue before depositing. When dye testing, the crew should keep in mind that each structure (sink, toilet, etc.) should be tested separately. Many times a single utility in a basement may be incorrectly connected to a storm drain line instead of a sanitary line.

f. Televising: Televised video inspections are a useful technique when an illicit connection or infiltration from a nearby sanitary sewer is suspected, but little evidence of the illicit discharge remains behind. The following two types of video cameras are available for use:

1. A small camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping.
2. A larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe. Typically the operator of the camera has access to a keyboard or audio voice-over to record significant findings on the videotape that is produced for future review and evaluation.

g. Smoke testing: Smoke testing is a useful technique for tracing intermittent discharges or continuous discharges that have no apparent source site. Smoke is introduced into the storm drain system, and emerges at locations that are connected to the system. Smoke testing works best for short reaches of pipe, or in situations where pipe diameters are too small for video testing.

Notifying the public about the date and purpose of smoke testing before starting is critical. The smoke used is non-toxic, but can cause respiratory irritation, which can be a problem for some residents. Residents should be notified at least two weeks prior to testing, and should be provided the following information (Hurco Technologies, Inc. 2003):

1. Date testing will occur
2. Reason for smoke testing
3. Precautions they can take to prevent smoke from entering their homes or businesses
4. What they need to do if smoke enters their home or business, and any health concerns associated with the smoke
5. A number residents can call to relay any particular health concerns (e.g., chronic respiratory problems)

2.4 Citizen Call-In Program

Activities and Definition

a. A citizen call-in program is an effective way to identify illicit discharges. A citizen comment or complaint line will be publicized in the community. To maximize the effectiveness of citizen call-ins, dispatch personnel should be

instructed on the use of the IDDE Inspection Form in order to collect as much information as possible at the time of the report (Appendix C). Dispatch personnel should also be instructed as to where to direct the information gathered from the inspection form so that appropriate action is taken.

b. The Program Manager should identify who should be trained, and where the call-in line will be publicized in the discussion column. For active websites and dedicated webmasters, an on-line forum could be incorporated into a stormwater page to encourage public reporting.

Preparation

a. Have a system in place to receive phone calls and collect information regarding suspected illicit discharges.

Process

a. Use an IDDE Inspection Form to collect the appropriate information from the caller. Then, transfer the inspection form to the proper authority. (i.e. department head, stormwater specialist, construction inspector, code enforcement officer, or other assigned personnel.)

b. Promptly investigate reported incidents.

c. If an illicit discharge of unknown source is confirmed, follow the procedure of Tracing Illicit Discharges.

d. If an illicit discharge known source is confirmed:

   i. For Non-Emergency Situations: Follow the Illicit Discharges and Connection Enforcement policy outlined in the City's Enforcement Response Procedures.
   ii. For Spills and Emergency Situations: Follow the City's Spill Response Plan (Appendix E).

2.5 Tracking Illicit Discharges

a. Developing a long-term tracking program can help Program Managers better understand the origins of illicit discharges and identify maintenance issues for the storm drain system structures. A tracking program will also facilitate evaluation of the overall IDDE program and will expedite annual reporting. An effective tracking program should address illicit discharge and maintenance issues resulting from the following:

   1. Citizen complaints
   2. Opportunistic inspections

3. Regular longer term inspections
4. Removal actions taken for illicit discharges

b. Alexandria's City Works system can be modified to include all the fields on the Dry Weather Outfall Inspection Form. The advantage to this tracking program is that the database can be easily linked to GIS data. Linking to GIS data allows mapping of illicit discharge locations, citizen complaint locations, and many other IDDE issues which can assist greatly in the overall program. Table 2 contains simple attributes that can be used in the database.

Table 2 Example Illicit Discharge Database Attributes

Date of Incident/ Date Reported:	**Report Initiated By:** Phone, drop-in, contact information (optional), etc.	**Location of Discharge**: If known - lat/long, outfall #, closest street address, nearby landmark, etc.	**Descrip. of Discharge:** For example - dumping, washwater, suds, oil, solvents, chemicals, sewage, etc.	**Actions to be taken:** Who, What, Where, When and How…(what should be done)	**Descrip. of Resolution:** Outcome of actions taken and any necessary follow-up (what was done)	**Date Resolved:**
Ex: 10/6/2014	*Drop-in, anonymous*	*1234 Maple Street*	*Motor oil*	*Neighbor was dumping motor oil into stormdrain in front of 1234 Maple Street. Public Works Director will send written warning to resident.*	*Public Works Director mailed a written warning to resident dumping motor oil on 10/9/2014.*	*10/9/2014*

2.6 Opportunistic Illicit Discharge Observation

Activities and Definition

Opportunistic illicit discharge observations are identified as a result of locating illicit discharges during routine City activities, which may include building inspections, system maintenance, etc.

Preparation

a. Be alert for potential illicit discharges to the municipal stormwater system while going about normal work activates.

Process

a. Call the appropriate authority (i.e. department head, stormwater specialist, construction inspector, code enforcement officer or a supervisor)

b. Assess the general area of the illicit discharge to see if you can identify its source.

c. Whenever possible, take photographs of the suspected illicit discharge.

d. Responding stormwater department personnel or code enforcement officer will complete the following:

    1. Use the IDDE Inspection Form to document observations.
    2. Obtain sample for visual observation and complete and Outfall Inspection Form, If applicable.
    3. Follow the procedure of IDDE – Tracing Illicit Discharges.

e. If clean-up is required, use the following procedures:

    i. For Non-Emergency Situations: Follow the Illicit Discharges and Connection Enforcement policy outlined in the City's Enforcement Response Procedures.
    ii. For Spills and Emergency Situations: Follow the City's Spill Response Plan (Appendix E).

Documentation

a. File all completed forms (i.e. IDDE Inspection Form, Outfall Inspection Form)

b. Document any further action taken.

2.7 Training

Activities and Definition

Training of city staff will be important so that they are aware of the importance of Illicit Discharge Detection and Elimination. This includes knowledge in identifying illicit discharges and procedures to report and document them.

The following list gives the yearly training required for departments and the people involved.

a. Employees of City owned or operated facilities:
Including water quality impacts associated with illicit discharges and improper disposal of waste.

b. MS4 engineers, development and plan review staff, land use planners:
Post-construction stormwater control requirements and associated BMPs.

c. Field Staff:
Identification, investigation, termination, cleanup, and reporting of illicit discharges.

d. Office Staff:
Illicit discharge reporting.

e. Field and Other Staff:
Implementation of the construction and post-construction stormwater management program, including: permitting, plan review, inspections, and enforcement.

f. All employees:
Employees who have primary construction, operation, or maintenance job functions that are likely to impact stormwater quality, in addition to law enforcement and emergency services personnel (i.e. fire department) who may be responsible for identifying illicit discharges.

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APPENDIX A
Definitions

Appendix A: Definitions

Authorized Enforcement Agency: the City of Alexandria.

Best Management Practices (BMPs): schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

Clean Water Act: The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

Construction Activity: Activities subject to NPDES Construction Permits. These include construction projects resulting in land disturbance of one acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.

Hazardous Materials: Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Illegal Discharge: Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in this ordinance.

Illicit Discharge Types:

> **Transitory illicit discharges:** Typically one-time events resulting from spills, breaks, dumping, or accidents. Transitory illicit discharges are often reported to an authority through a citizen complaint line or following observation by a municipal employee during regular duties. Because they are not recurring, they are the most difficult to identify, trace, and remove. The best method to reduce transitory discharges is through general public education, education of municipal response personnel, tracking of discharge locations, and enforcement of an illicit discharge ordinance.
>
> **Intermittent illicit discharges:** Occur occasionally over a period of time (several hours per day, or a few days per year). Intermittent discharges can result from legal connections to the storm drain system, such as a legal sump pump connection that is illegally discharging anything other than groundwater. Intermittent discharges can also result from activities such as drum washing in exterior areas. These types of discharges are more likely to be discovered, and are less difficult to trace and remove, but can still present significant challenges. These discharges can have large or small impacts on waterbodies depending on pollutant content and the size of the receiving water body.

Continuous illicit discharges: These are typically the result of a direct connection from a sanitary sewer, overflow from a malfunctioning septic system, inflow from a nearby subsurface sanitary sewer that is malfunctioning, or an illegal connection from a commercial or industrial facility. Continuous illicit discharges are usually easiest to trace and can have the greatest pollutant load (CWP 2004).

Illicit Connections: An illicit connection is defined as any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Industrial Activity: Activities subject to NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).

Minnesota Pollution Control Agency (MPCA): The Minnesota Pollution Control Agency is a Minnesota state agency that monitors environmental quality, offers technical and financial assistance, and enforces environmental regulations for the State of Minnesota.

Municipal Separate Storm Sewer Systems (MS4): A municipal separate storm sewer system is a conveyance or system of conveyances that is owned or operated by a public entity (which can include cities, townships, counties, military bases, hospitals, highway departments, universities, etc.) and is designed or used for collecting or conveying stormwater, which are not part of a publicly owned wastewater treatment system.

National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit: means a permit issued by EPA (or by a State under authority delegated pursuant to 33 USC § 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.

Non-Storm Water Discharge: Any discharge to the storm drain system that is not composed entirely of storm water.

Person: Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and action as either the owner or as the owner's agent.

Pollutant: Anything which causes or contributes to pollution. 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, pesticides, herbicides, and fertilizers; hazardous substances and wastes and

residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Premises: Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Standard Operating Procedures (SOPs): Established or prescribed methods to be followed routinely for the performance of designated MS4 operations or in designated situations.

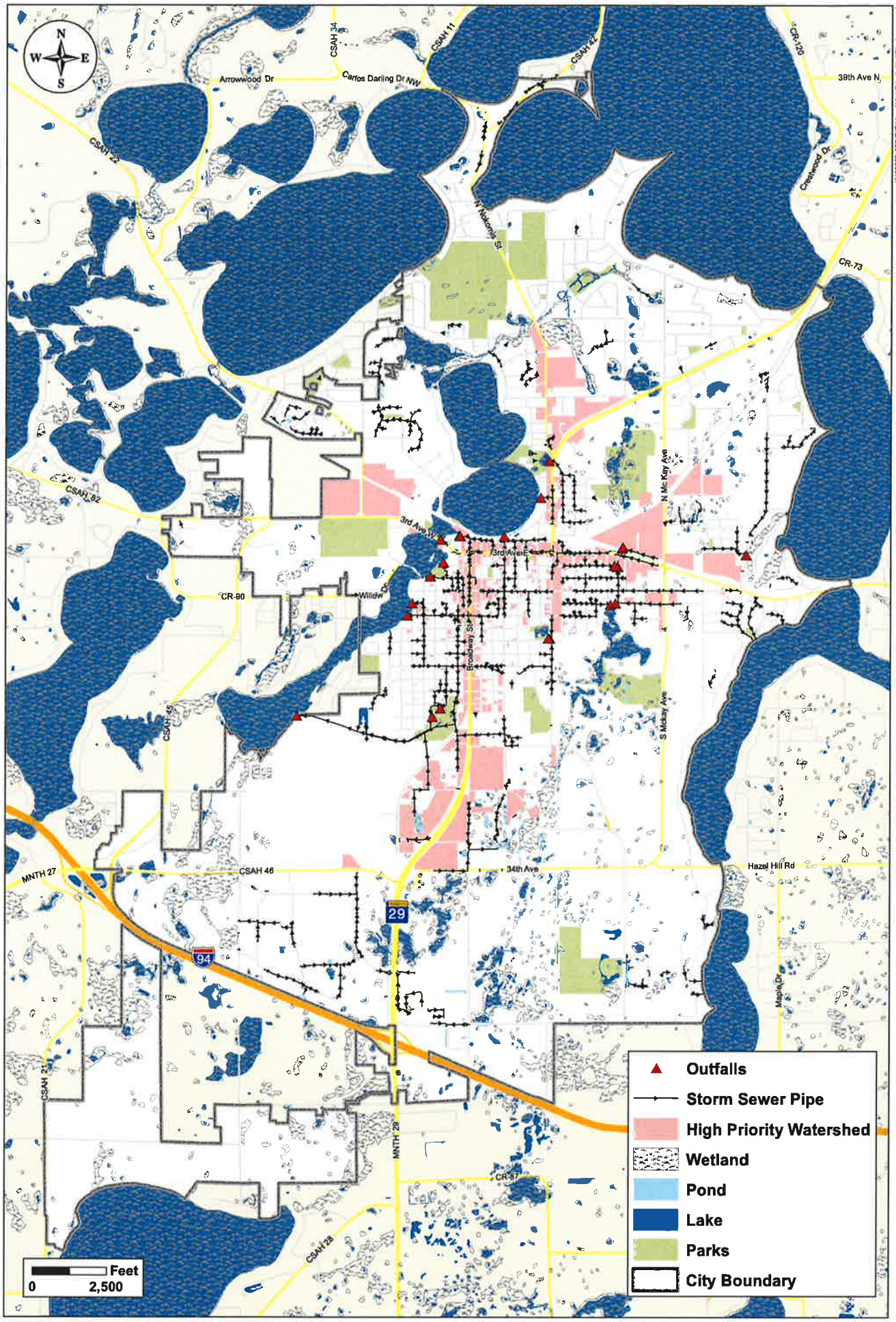
Storm Drain System: Publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

Stormwater: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

Stormwater Pollution Prevention Plan: A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to stormwater, stormwater conveyance systems, and/or receiving waters to the maximum extent practicable.

Wastewater: Any water or other liquid, other than uncontaminated storm water, discharged from a facility.

APPENDIX B
High Priority Illicit Discharge Evaluation Map



ALEXANDRIA
Easy To Get To. Hard To Leave.

High Priority Illicit Discharge Evaluation Map

City of Alexandria, MN

WSB & Associates, Inc.

APPENDIX C
IDDE Inspection Form

Illicit Discharge Detection and Elimination Inspection Form (MCM 3)

General Information:		
Location of Violation:		
Name of trained staff conducting inspection:	Inspection Date:	Time: AM PM
Name of violator (if available):	Weather:	Photos taken? ☐ Yes ☐ No
Inspection Reason: ☐Regular Inspection ☐Complaint ☐Alleged illicit discharge	Inspection completed during dry weather condition (period of 72 or more hours of no precipitation): ☐ Yes ☐ No Rainfall in past 24 hours: _____ (inches) Rainfall Data Source: ☐ on-site gauge ☐ weather station w/in 1 mi	

Citizen Call-In Information *(for citizen call-in incidents only):*			
Call Taken By:	Date of Call:	Time of Call: AM/PM	Contact Information for Caller *(optional):*

Incident Location *(Provide one or more below)*

Outfall ID #: _____ Closest Street Address/Landmark: _____

Detection and Tracking:	**Type of Discharge:**	
☐Visual inspection ☐Mobile camera ☐Sample Collected ☐Other effective investigation tool: _____	☐Illegal dumping ☐Sanitary sewer ☐Cross connection ☐Floor drain connection to storm sewer	☐Inflow / infiltration ☐Failing septic system ☐Pump station failure ☐Other: _____

☐Inlet (City ID # _____) ☐Outlet (City ID # _____)

Description of Discharge:	
☐Flow present?	☐Turbidity _____
☐Estimated discharge _____	☐Floatables _____
☐Water Color _____	☐Sedimentation _____
☐Odor _____	☐Oil Sheen _____

Reporting:	
Responsible Party: _____ (if identified)	Follow-up Required? ☐Yes ☐ No
MN State Duty Officer Notified? ☐ Yes ☐ No (1-800-422-0798) Duty Officer Report # _____	Name of Staff to conduct Follow-up:

Enforcement used: ☐ Verbal Warning Date: _____ ☐ Written Warning Date: _____ ☐ Stop Work Order Date: _____ ☐ Other: _____. Date: _____.

Corrective Actions (including completion schedule and resolution date):

APPENDIX D
Outfall Inspection Form

City of Alexandria
Outfall Inspection Form

General Information:

Outfall ID #_____	Inspected by:	Date: _____

Last Rain Date (if known):_____ Amount:_____ (inches)
Today's Rainfall Amount: _____ (inches)

Address/Nearby Landmark: _____

Weather Conditions: ☐Clear Skies ☐ Overcast ☐ Other: _____

Photos taken? ☐Yes ☐No

Outfall Data:

Outfall Type:
- ☐Manhole
- ☐Flared End
- ☐Swale
- ☐Weir
- ☐Flume
- ☐Culvert
- ☐Other

Outfall Condition:
- ☐Clear/Functioning
- ☐Needs Maintenance/Cleaning
- ☐Needs Repair
- ☐Needs Replacement

Immediate Action Needed? ☐Yes ☐No

Other Notes: _____-

Discharge Data:

Visible Flow? ☐Yes ☐No ☐Submerged	Flow Depth: _____(approx. inches)	Significant erosion and/or sedimentation? ☐Yes ☐No

If flow is present, describe and check all that apply:
- ☐Colored Water _____
- ☐Odor _____
- ☐Murky, Turbid _____
- ☐Floating objects _____
- ☐Scum _____
- ☐Oily Sheen _____
- ☐Sludge Present _____
- ☐Clear _____
- ☐Suds _____

Illicit Discharge Details:

☐Follow-up Required	Yes / No	_____
☐IDDE Source Identified	Yes / No	_____
☐Responsible Party Name		_____
☐Potential Pollutants?	Yes / No	_____
☐Enforcement Response Followed	Yes / No	_____

☐≥ 72 hours since last rainfall	Yes / No
☐Sample Collected?	Yes / No
☐Photos taken?	Yes / No
☐Corrective Action Required?	Yes / No

Additional Information:

Comments / Corrective Action Conducted:

APPENDIX E
Spill Response Plan

City of Alexandria
Spill Response Plan

Emergency Contact Information

Onsite Emergency Contact(s)	Lynn Timm – Primary (320) 759-3644 Mike Schmidt – Secondary (320) 759-3639
Emergency Response Contact(s)	Fire/Paramedics/Police: 911 Fire Non-Emergency Line: (320)763-6488 MN Duty Officer: (651) 649-5451 MN Department of Health: (651) 201-5414 National Response Center: (800) 424-8802

Spill Response Plan

Step 1: Approach the Scene

- Use safety first in responding to spills. Do not endanger yourself or others by entering a hazardous environment. If there is a fire or medical attention is needed, call 911 immediately.
- Avoid exposure. Approach the spill from upwind and stay clear of spills, vapors, fumes and smoke.

Step 2: Secure the Scene

- Isolate the spill.
- Keep people away from the scene; divert traffic and pedestrians as needed.
- If possible, stop the source of the spill.
- Eliminate any ignition sources.

Step 3: Identify the Hazards

- Attempt to identify the spilled material.
    - Characteristics (odor, color, sheen), labels/markings, container type, activities in the area, hazard warnings, etc.

Step 4: Assess the Situation

- Determine the appropriate first response actions and if additional response help is needed
- The response will be dictated by the size of the spill and the hazard:
    - Is there a fire, a spill, or a leak?
    - Is there a potential for it to mix with something else?
- Observe your surroundings:

    - Who/what is at risk?
    - Is an evacuation necessary?
    - What resources are required and readily available to contain the spill?

Step 5: Report the Spill

- Report spills that may cause pollution, such as toxic, flammable, corrosive and dangerous industrial chemical spills.
    - Minnesota has a reporting threshold of greater than five-gallons for petroleum spills. Spills of any quantity of all other chemicals or materials should be reported. When in doubt, report.
- Contact the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the spill of any substance or material may cause or has caused pollution of waters of the state.

Step 6: Contain the Spill

- Always wear the appropriate personal protective equipment, such as gloves, boots, and safety glasses. Know the limitations of the personal protective equipment.
- Place booms or available materials around the perimeter of the spill to keep it from spreading.
    - If the spill is a threat to any storm water conveyance, like street gutter, storm drain or inlet, swale, ditch, storm, or river, place absorbent between the spill and storm device.
- Apply absorbent materials starting from the downhill and outside edge of the spill.

Step 7: Clean Up the Spill

- If you have the proper training, small spills may be cleaned up according to the chemical label and your training.
    - Do not wash or hose down the spill into the street, ditch or storm drain.
    - If flammable liquid is spilled, ventilate the area and eliminate any possible sources of ignition.
    - Clean up the spills, leaks and drips quickly. Use "dry" clean-up methods, such as sweeping or shoveling. If the spill can be moved by wind, cover the material with sheeting to prevent spreading.
    - Place all clean-up waste in appropriate containers. If hazardous, insure that material is placed in a hazardous waste container.
    - Dispose of spill material in compliance with all Federal, State and Local regulations.
- If you do not have proper training, or the spill is a large spill, leave the area and notify Emergency Responders (911). Give the operator the spill location, chemical spilled and approximate amount.

Step 8: Complete Spill Documentation and Follow-up

- Clean and decontaminate all reusable spill cleanup equipment.
- Be sure to restock your spill response materials and personal protection equipment as soon as possible.
- Update facility spill records.

APPENDIX F
Ordinances

ORDINANCE NO. 722
2ND SERIES

AN ORDINANCE AMENDING ORDINANCE NO. 656, 2ND SERIES, TO REPLACE THE EXISTING CHAPTER 12 (STORM WATER MANAGEMENT ORDINANCE) IN ITS ENTIRETY WITH A NEW STORM WATER MANAGEMENT ORDINANCE

WHEREAS, the City Council of the City of Alexandria desires to adopt a new Storm Water Management Ordinance in accordance with the Minnesota Pollution Control Agency Municipal Separate Storm Sewer System 2015 permit update; and

WHEREAS, the City Council of the City of Alexandria desires to make Chapter 12 in the Alexandria City Code the new Storm Water Management Ordinance:

Section 12.01 General Provisions

Subd. 1. Statutory Authorization and General Policy. This Ordinance is adopted pursuant to the authorization and policies contained in Minnesota Statutes Chapters 103B, 105, 462, and 497, Minnesota Rules, Parts 6120.2500-6120.3900, and Minnesota Rules Chapters 8410 and 8420 and goals and policies contained in the most recent Comprehensive Stormwater Management Plan for the City of Alexandria.

Subd. 2. Purpose. The purpose of this Ordinance is to set forth the minimum requirements for stormwater management that will diminish threats to public health, safety, public and private property and natural resources of the City by establishing performance standards including:

A. Protect life and property from dangers and damages associated with flooding.
B. Protect public and private property from damage resulting from runoff or erosion.
C. Control the annual runoff rates from post development site conditions to match the annual runoff rates from predevelopment site conditions.
D. Promote site design that minimizes the generation of stormwater and maximizes pervious areas for stormwater treatment.
E. Promote regional stormwater management by watershed.
F. Provide a single, consistent set of performance standards that apply to all developments.
G. Protect water quality from nutrients, pathogens, toxics, debris and thermal stress.
H. Promote infiltration and groundwater recharge.

I. Provide a vegetated corridor (buffer) to protect water resources from development.
J. Protect or improve the water quality of local lakes, wetlands and water bodies.
K. Protect and enhance fish, wildlife and habitat and recreational opportunities.
L. Control runoff volumes resulting from development within designated sub-watersheds through appropriate infiltration practices.

Subd. 3. Scope. No person shall develop any land for residential, commercial, industrial, or institutional uses without having provided stormwater management measures that control or manage runoff from such developments as provided in this Section.

Section 12.02 Definitions. Unless specifically defined below, words or phrases used in this Section shall be interpreted so as to give them the same meaning as they have in common usage and to give this Section its most reasonable application. For the purpose of this Section, the words "must" and "shall" are mandatory and not permissive. All distances, unless otherwise specified, shall be measured horizontally.

A. **Applicant** - Any person or group that applies for a building permit, subdivision approval, or a permit to allow land disturbing activities. Applicant also means that person's agents, employees, and others acting under this person's or group's direction. The term "applicant" also refers to the permit holder or holders and the permit holder's agents, employees, and others acting under this person's or group's direction.

B. **Best Management Practice (BMP)** - Best management practice is a technique or series of techniques which are proven to be effective in controlling runoff, erosion and sedimentation.

C. **Buffer** - A regulated area where scrutiny will be exercised over activities near wetlands and water bodies and a non-disturbance area where natural vegetation must be maintained.

D. **Common Plan of Development or Sale** - A contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, or on different schedules, but under one proposed plan. This item is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land

disturbing activities may occur.

E. **Developer** - Any person, group, firm, corporation, sole proprietorship, partnership, state agency, or political subdivision thereof engaged in a land disturbance activity.

F. **Development** - Any land disturbance activity that changes the site's runoff characteristics in conjunction with residential, commercial, industrial or institutional construction or alteration.

G. **Dewatering -** The removal of water for construction activity. It can be a discharge of appropriated surface or groundwater to dry and/or solidify a construction site. It may require Minnesota Department of Natural Resources permits to be appropriated and if contaminated may require other Minnesota Pollution Control Agency (MPCA) permits to be discharged.

H. **Discharge -** The release, conveyance, channeling, runoff, or drainage, of storm water including snowmelt, from a construction site.

I. **Energy Dissipation** - This refers to methods employed at pipe outlets to prevent erosion. Examples include, but are not limited to; aprons, riprap, splash pads, and gabions that are designed to prevent erosion.

J. **Erosion** - Any process that wears away the surface of the land by the action of water, wind, ice, or gravity.

K. **Erosion Control -** Refers to methods employed to prevent erosion. Examples include soil stabilization practices, horizontal slope grading, temporary or permanent cover, and construction phasing.

L. **Exposed Soil Areas** - All areas of the construction site where the vegetation (trees, shrubs, brush, grasses, etc.) or impervious surface has been removed, thus rendering the soil more prone to erosion. This includes topsoil stockpile areas, borrow areas and disposal areas within the construction site. It does not include temporary stockpiles or surcharge areas of clean sand, gravel, concrete or bituminous, which have less stringent protection. Once soil is exposed, it is considered "exposed soil," until it meets the definition of "final stabilization."

M. **Filter Strips** - A vegetated section of land designed to treat runoff as overland sheet flow. Their dense vegetated

cover facilitates pollutant removal and infiltration.

N. **Final Stabilization** - Means that all soil disturbing activities at the site have been completed, and that a uniform (evenly distributed, e.g., without large bare areas) perennial vegetative cover with a density of seventy (70) percent of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures have been employed. Simply sowing grass seed is not considered final stabilization. Where agricultural land is involved, such as when pipelines are built on crop or range land, final stabilization constitutes returning the land to its preconstruction agricultural use.

For individual lots in residential construction by either: (a) The homebuilder completing final stabilization as specified above, or (b) the homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization. (Homeowners typically have an incentive to put in the landscaping functionally equivalent to final stabilization as quick as possible to keep mud out of their homes and off sidewalks and driveways.); or

For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land) final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters and drainage systems, and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria in (a) or (b) above.

O. **Hydric Soils** - Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

P. **Hydrophytic Vegetation** - Macrophytic (large enough to be observed by the naked eye) plant life growing in water, soil or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Q. **Illicit Discharge** - Any direct or indirect non- stormwater discharges to the storm drain system, except exempted in

Section 12.13 of this Ordinance.

R. **Illicit Connection** - Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including, but not limited to, any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by the City; or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by the City.

S. **Impervious Surface** - A constructed hard surface that either prevents or retards the entry of water into the soil, and causes water to run off the surface in greater quantities and at an increased rate of flow than existed prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.

T. **Land Disturbance Activity** - Any land change that may result in soil erosion from water or wind and the movement of sediments into or upon waters or lands within this government's jurisdiction, including construction, clearing & grubbing, grading, excavating, transporting and filling of land. Within the context of this Section, land disturbance activity does not mean: Minor land disturbance activities such as home gardens and an individual's home landscaping, repairs, and maintenance work, unless such activity exceeds one half acre in exposed soil. Additions or modifications to existing single family structures which result in creating under one half acre of exposed soil or impervious surface and/or is part of a larger common development plan. Construction, installation, and maintenance of fences, signs, posts, poles, and electric, telephone, cable television, utility lines or individual service connections to these utilities, which result in creating under one half acre of exposed soil or impervious surface. Tilling, planting, or harvesting of agricultural, horticultural, or silvicultural (forestry) crops. Emergency work to protect life, limb, or property and emergency repairs, unless the land disturbing activity would have otherwise required an approved erosion and sediment control plan, except for the emergency. If such a plan would have been

required, then the disturbed land area shall be shaped and stabilized in accordance with the City's requirements as soon as possible.

U. **Land Locked Basin -** Defined as a low area such as a lake, pond, or wetland entirely surrounded by land with no regularly active outlet channel.

V. **Large Site Construction Activity** - Includes clearing, grading or excavation that disturbs one (1) or more acres or less than five acres of total land area that is part of a larger common plan of development or sale if the larger common plan will disturb five (5) acres or more.

W. **National Pollutant Discharge Elimination System (NPDES)** - The program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits under the Clean Water Act (Sections 301, 318, 402, and 405) and United States Code of Federal Regulations Title 33, Sections 1317, 1328, 1342, and 1345.

X. **Native Vegetation** - The presettlement (already existing in Minnesota at the time of statehood in 1858) group of plant species native to the local region, that were not introduced as a result of European settlement or subsequent human introduction.

Y. **Non-Stormwater Discharge** - Any discharge to the storm drain system that is not composed entirely of stormwater.

Z. **Ordinary High Water Mark** - The boundary of public waters and wetlands, and shall be an elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel. For reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.

AA. **Owner** - The person or party possessing the title of the land on which the construction activities will occur; or if the construction activity is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the construction activity.

BB. **Paved Surface** - A constructed hard, smooth surface made of

asphalt, concrete or other pavement material. Examples include, but are not limited to, roads, sidewalks, driveways and parking lots.

CC. **Permanent Cover** - Means "final stabilization." Examples include grass, gravel, asphalt, and concrete. See also the definition of "final stabilization."

DD. **Permit** - Within the context of this Section a "permit" is a written warrant or license granted for construction, subdivision approval, or to allow land disturbing activities.

EE. **Phased Project or Development** - Clearing a parcel of land in distinct phases, with at least fifty percent (50%) of the project's preceding phase meeting the definition of "final stabilization" and the remainder proceeding toward completion, before beginning the next phase of clearing.

FF. **Prohibited Discharge** - Any substance which, when discharged has potential to or does any of the following: (1) Interferes with state designated water uses; (2) Obstructs or causes damage to waters of the state; (3) Changes water color, odor, or usability as a drinking water source through causes not attributable to natural stream processes affecting surface water or subsurface processes affecting groundwater; (4) Adds an unnatural surface film on the water; (5) Adversely changes other chemical, biological, thermal, or physical condition, in any surface water or stream channel; (6) Degrades the quality of ground water; or (7) Harms human life, aquatic life, or terrestrial plant and wildlife. This includes but is not limited to dredged soil, solid waste, incinerator residue, garbage, wastewater sludge, chemical waste, biological materials, radioactive materials, rock, sand, dust, industrial waste, sediment, nutrients, toxic substance, pesticide, herbicide, trace metal, automotive fluid, petroleum-based substance, and oxygen-demanding material.

GG. **Saturated Soil** - The highest seasonal elevation in the soil that is in a reduced chemical state because of soil voids being filled with water. Saturated soil is evidenced by the presence of redoximorphic features or other information.

HH. **Sediment** - The product of an erosion process; solid material both mineral and organic, that is in suspension, is being transported, or has been moved by water, wind, or ice, and has come to rest on the earth's surface either above or below water level.

II. **Sedimentation** - The process or action of depositing sediment.

JJ. **Sediment Control** - The methods employed to prevent sediment from leaving the development site. Examples of sediment control practices are silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, and temporary or permanent sedimentation basins.

KK. **Small Site Construction Activity** - Includes clearing, grading or excavation, that disturbs one-half acre (½) to one (1) acre, or less than one (1) acre of total land area that is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre.

LL. **Soil** - The unconsolidated mineral and organic material on the immediate surface of the earth. For the purposes of this document temporary stockpiles of clean sand, gravel, aggregate, concrete or bituminous materials (which have less stringent protection) are not considered "soil" stockpiles.

MM. **Stabilized** - The exposed ground surface after it has been covered by sod, erosion control blanket, riprap, pavement or other material that prevents erosion. Simply sowing grass seed is not considered stabilization.

NN. **Steep Slope** - Any slope steeper than twelve (12) percent (Twelve (12) feet of rise for every one hundred (100) feet horizontal run).

OO. **Storm Drain System** - The city-owned facilities by which stormwater is collected or conveyed, including, but not limited to, any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

PP. **Stormwater** - Under Minnesota Rule 7077.0105, subpart 41b stormwater, "means precipitation runoff, stormwater runoff, snow melt runoff, and any other surface runoff and drainage. Stormwater does not include construction site dewatering.

QQ. **Stormwater Management Plan (also referred to as Stormwater Pollution Prevention Plan SWPPP)** - A joint stormwater and erosion and sediment control plan that is a document containing the requirements of this Section, that when implemented will decrease soil erosion on a parcel of land and off-site nonpoint pollution. It may involve both temporary and permanent

controls.

RR. **Stormwater Manual -** The most recent version of the Minnesota Pollution Control Agency (MPCA) Minnesota Stormwater Manual. This Manual is the compilation of design, performance, and review criteria approved by the by the City for stormwater management practices.

SS. **Structure -** Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, roads, parking lots, and paved storage areas.

TT. **Subdivision** - Any tract of land divided into building lots for private, public, commercial, industrial, etc. development.

UU. **Surface Water -** All streams, lakes, ponds marches, wetlands, reservoirs, springs, rivers, drainage systems, waterways, watercourses and irrigation systems whether natural or artificial public or private.

VV. **Temporary Erosion Protection** - Short-term methods employed to prevent erosion. Examples of such protection are straw, mulch, erosion control blankets, wood chips, and erosion netting.

WW. **Vegetated or Grassy Swale** - A vegetated earthen channel that conveys storm water, while treating the stormwater by biofiltration. Such swales remove pollutants by both filtration and infiltration.

XX. **Waters of the State -** As defined in Minnesota Statutes section 115.01, subdivision 22 the term „waters of the state" means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof."

YY. **Wet Detention Facility** - Depressions constructed by excavation and embankment procedures to store excess runoff temporarily on a site. After a runoff event, overflow from the pond is released at a controlled rate by an outlet device designed to release flows at various peak rates and elevations until the design elevation of the pool is reached. Wet detention facilities maintain a permanent pool of water between storm events. Wet detention facilities are located to collect stormwater inflows from adjacent

drainage areas and are usually designed to control peak discharges from relatively large design storms.

ZZ. **Wetland** - As defined in Minnesota Rules 7050.0130, subpart F, ". . . 'wetlands' are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Constructed wetlands designed for wastewater treatment are not waters of the state.

Section 12.03 **Management of Site Vegetation.** Any landowner shall provide for the installation and maintenance of vegetation on their property in accordance with the following criteria, regardless as to whether or not a stormwater management plan, stormwater permit has been approved or is necessary under this Section. Failure to comply with this section shall constitute a violation and subject the landowner to the enforcement provisions, penalties and noncompliance actions outlined in this Section.

A. **Use of Impervious Surfaces:** No person shall apply items included in the definition of "prohibited discharge" on impervious surfaces or within stormwater drainage systems with impervious liners or conduits.

B. **Unimproved Land Areas:** Except for driveways, sidewalks, patios, areas occupied by structures, landscaped areas, or areas that have been otherwise improved, all areas shall be covered by plants or vegetative growth.

C. **Use of Pervious Surfaces:** No person shall deposit grass clippings, leaves, or other vegetative materials, with the exception of normal mowing or weed control, within natural or manmade watercourses, wetlands, or within wetland buffer areas. No person shall deposit items included in the definition of "prohibited discharge" except as noted above.

Section 12.04 **Stormwater Management Plans and Permits.**

A. **Required.** A stormwater management plan and permit shall be required, and all construction site erosion and sediment control provisions of this permit shall apply, to all land disturbing activities associated with construction activity, as defined in this Section.

1 Every applicant for a building permit that involves disturbing ½ acre or more of land, subdivision approval, or other permit to allow ½ acre or more land disturbing activities must submit a stormwater management plan (also referred to as a Stormwater Pollution Prevention Plan - SWPPP) to the City. No land shall be disturbed nor shall any building permit, subdivision approval, or permit to allow land disturbing activities shall be issued until approval of this plan.

2 All plans, excepting those required as a part of small site construction activity, shall be consistent with National Pollution Discharge Elimination Permit (NPDES) requirements, and the filing or approval requirements of the Douglas County Soil and Water Conservation District or other regulatory bodies. All stormwater mitigation and management technologies shall be consistent with the most recent version of the Minnesota Pollution Control Agency (MPCA) General Stormwater Permit for Construction Activity and the Minnesota Stormwater Manual. This Manual is the compilation of design, performance, and review criteria approved by the City for stormwater management practices.

Section 12.05 <u>Stormwater Management Plan Submittal Requirements.</u>

Subd. 1. Small Site Construction Application. Small site construction projects shall be developed and in compliance with a stormwater management plan that includes the following:

A. Two sets of clearly legible copies of permit submittals and required information shall be submitted to the City and shall be accompanied by all applicable fees.
B. Drawings shall be prepared to a scale appropriate to the site of the project and suitable for the review to be performed. At a minimum, the scale shall be 1 inch equals 50 feet.
C. Included on all submittals shall be the project name and the date of preparation.
D. Also included on all submittals shall be:
   1. Names, addresses and phone numbers of the land surveyor, and engineer, if any.
   2. Property boundaries.
   3. Area(s) to be disturbed.
   4. Spot elevations of proposed grades in relation to existing grades on the subject property and adjacent properties.
   5. Drainage arrows depicting water movement.
   6. Areas where finished slope will be steeper than 5:1

shall be noted.

7. Location and type of erosion/sediment control devices.
8. Location of storm drains, wetlands, sediment ponds and lakes.
9. Location of material stockpiles.
10. Plan for temporary site stabilization.
11. Plan for final site stabilization.
12. Temporary rock entrance location.
13. Name of individual responsible for installation and maintenance of control devices.
14. Any other information pertinent to the particular project that, in the opinion of the City, is necessary for the review of the project.

Subd. 2. Large Site Construction Application. Large Site Construction Projects shall be consistent with the most recent version of the Minnesota Pollution Control Agency's NPDES General Stormwater Permit for Construction Activity and include the minimum requirements:

A. Identification and description including:
   1. Project name.
   2. Project type (residential, commercial, industrial, road construction, or other).
   3. Project location
   4. Parcel identification number (legal description).
   5. Names and addresses of the record owner, developer, land surveyor, engineer, designer and any agents, contractors, and subcontractors who will be responsible for project implementation.
   6. Identification of the entity responsible for long term maintenance of the project. This includes a maintenance plan and schedule for all permanent stormwater practices.
   7. Phasing of construction with estimated start date, time frames and schedules for each construction phase, and completion date.
   8. Copies of permits or permit applications required by any other governmental entity or agencies including mitigation measures required as a result of any review for the project (e.g. wetland mitigation, EAW, EIS, archaeology survey, etc.).

B. Existing Conditions - A complete site plan and specifications, signed by a person who is certified to design the plan shall be drawn to an easily legible scale, shall be clearly labeled with a north arrow and a date of preparation, and shall include, at a minimum, the following information:

1. Project map - An 8.5 by 11 inch United States Geological Survey (USGS) 7.5 minute quad or equivalent map indicating site boundaries and existing elevations.
2. Property lines and lot dimensions.
3. Existing zoning classifications for land within and abutting the development, including shoreland, floodway, flood fringe, or general floodplain, and other natural resource overlay districts.
4. All buildings and outdoor uses including all dimensions and setbacks.
5. All public and private roads, interior roads, driveways and parking lots.
6. Identify all natural and artificial water features (including drain tiles that would affect the project site) on site and within one (1) mile of project boundary, including, but not limited to lakes, ponds, streams (including intermittent streams), and ditches. Show ordinary high water

marks of all navigable waters, 100-year flood elevations and delineated wetland boundaries, if any. If not available, appropriate flood zone determination or wetland delineation, or both, may be required at the applicant's expense.

7. Map of watershed drainage areas, soil types, infiltration rates, depth to bedrock, and depth to seasonal high water table.
8. Steep slopes where areas of 12% or more existing over a distance for 50 feet or more.
9. Bluff areas where the slope rises at least 25 feet above the toe of the bluff and the grade of the slope from the toe of the bluff to a point 25 feet or more above the toe of the bluff averages 30% or greater.
10. Wooded area and tree survey as defined by the zoning authority.
11. Agricultural Land preservation area(s), County Biological Survey sites, or other officially designated natural resource.
12. Hydrologic calculations for volume runoff, velocities, and peak flow rates by watershed, for the 2-yr, 10-yr, and 100-yr 24-hour storm events. These shall include: p re-existing peak flow rates, a ssumed runoff curve numbers, time of concentration used in calculations, and the 100 - year flood elevation with and without the floodway if a flood insurance study has been done by the National Flood Insurance Program.

C. Bankfull discharge rate (1.5 year recurrence interval) of creek or stream if there is a waterway on the site or if the site discharges directly to the waterway.

D. Proposed Conditions - A complete site plan and specifications, signed by the person who designed the plan shall be drawn to an easily legible scale, shall be clearly labeled with a north arrow and a date of preparation, and shall include, at a minimum, the following information:

1. Project map - An 8.5 by 11 inch United States Geological Survey (USGS) 7.5 minute quad or equivalent map indicating site boundaries, proposed elevations, and areas not to be disturbed;
2. Property lines and lot dimensions of plat.
3. The dimensions and setbacks of all buildings and easements.
4. The location and area of all proposed impervious surfaces including public and private roads, interior roads, driveways, parking lots, pedestrian ways, and rooftops. Show all traffic patterns and types of paving and surfacing materials.
5. Location, size, and approximate grade of proposed public sewer and water mains.
6. Elevations, sections, profiles, and details as needed to describe all natural and artificial features of the project.
7. Identify all natural and artificial water features on site and within one (1) mile of project boundary, including, but not limited to lakes, ponds, streams (including intermittent streams), and ditches. Show ordinary high water marks of all navigable waters, 100-year flood elevations and delineated wetland boundaries, if any. If not available, appropriate flood zone determination or wetland delineation, or both, may be required at the applicant's expense.
8. Location and engineered designs for structural stormwater management practices including stormwater treatment devices that remove oil and floatable material (e.g., basin outlets with submerged entrances).
9. Normal water level, high water level, and emergency overflow elevations for the site.
10. For discharges to cold water fisheries, a description and plans to control temperature from stormwater runoff.
11. Floodway and flood fringe boundary, if available.
12. Any other information pertinent to the particular project that, in the opinion of the City, is necessary for the review of the project.

E. All proposed stormwater practices, hydrologic models, and design methodologies shall be reviewed by the City and certified for compliance by the City in accordance with their plans and specifications.

F. A detailed schedule indicating dates and sequence of land alteration activities; implementation, maintenance and removal of erosion and sedimentation control measures; and permanent site stabilization measures shall be provided.

G. A detailed description of how erosion control, sediment control and soil stabilization measures implemented pursuant to the plan will be monitored, maintained and removed. The plan must identify a person knowledgeable and experienced in erosion and sediment control who will oversee the implementation of the plan and the installation, inspection, and maintenance of the temporary and permanent stormwater management system. This person shall have completed an approved training and certification program.

Subd. 3. Permit Transfer. A permit runs with the property it covers, until the permitted activities are completed, and is transferable to new landowners in its entirety or by parcel, with each parcel being subject to the permit and any conditions that apply to that parcel. In the event land under such a permit is transferred or conveyed in fee, such transfer or conveyance must be reported in writing to the City and the new landowner within 7 days of the transfer. This section refers to City-issued permits and does not release the permittee or owner from transfer requirements of a NPDES permit.

Section 12.06 <u>Stormwater Management Plan Review Procedures.</u>

Subd. 1. Review Timeframe. The City will complete a review of the plan within twenty (20) days of receiving the plan from the developer.

Subd. 2. Meeting Requirements. If the City determines that the plan meets the requirements of this Ordinance, the City shall issue a permit valid for a specified period of time that authorizes the land disturbance activity contingent on the implementation and completion of the plan.

Subd. 3. Not Meeting Requirements. If the City determines that the plan does not meet the requirements of this Ordinance, the City shall not issue a permit for the land disturbance activity. The plan must be resubmitted for approval before the land disturbance activity begins. All land use and building permits shall be suspended until the developer has an approved plan.

Subd. 4. Amendments. The applicant must amend the plan as necessary to include additional requirements such as additional

or modified BMPs designed to correct problems identified or address situations whenever:

A. A change in design, construction, operation, maintenance, weather, or seasonal conditions that has a significant effect on the discharge of pollutants to surface waters or underground waters.

B. Inspections indicate the plan is not effective in eliminating or significantly minimizing the discharge of pollutants to surface waters or underground waters or that the discharges are causing water quality standard exceedances.

C. The plan is not achieving the general objectives of controlling pollutants or is not consistent with the terms and conditions of the permit.

Section 12.07 Waivers. The City Council, upon recommendation of the City Engineer, may waive a requirement of this Ordinance upon making a finding that the alternate design of the application will not adversely affect the standards of this Ordinance and the waiver of such requirement will not adversely affect the standards and requirements set forth in this Ordinance. The City Council may require as a condition of the waiver, such dedication or construction, or agreement to dedicate or construct as may be necessary to adequately meet said standards and requirements.

Section 12.08 Stormwater Management Plan Inspections and Enforcement.

Subd. 1. Inspections. The City will conduct inspections on a regular basis to ensure that the plan is properly installed and maintained. In all cases the inspectors will attempt to work with the builder or developer to maintain proper erosion and sediment control at all sites. In cases where cooperation is withheld, the City shall issue construction stop work orders, until erosion and sediment control measures meet the requirements of this Ordinance. An inspection must follow before work can commence. Inspections are required as follows:

A. Before any land disturbing activity begins.
B. For residential construction, at the time of footing, framing and final inspections.
C. At the completion of the project.
D. Prior to the release of any financial securities, if applicable.
E. Random inspections during the course of the project to ensure compliance with the SWPPP, including after a storm event greater than 0.5 inches over 24 hours.

Subd. 2. Notification of Failure of the SWPPP. The City shall notify the permit holder of the failure of the SWPPP's measures.

A. **Initial contact**. The initial contact will be to the party or parties listed on the application and/or the plan as contacts. Except during an emergency action, forty-eight (48) hours after notification by the City or seventy-two (72) hours after the failure of erosion control measures, whichever is less, the City at its discretion, may begin corrective work. Such notification should be in writing, but if it is verbal, a written notification should follow as quickly as practical. If after making a good faith effort to notify the responsible party or parties, the City has been unable to establish contact, the City may proceed with corrective work. There are conditions when time is of the essence in controlling erosion. During such a condition the City may take immediate action, and then notify the applicant as soon as possible.

B. **Erosion off-site**. If erosion breaches the perimeter of the site, the applicant shall immediately develop a cleanup and restoration plan, obtain the right-of entry from the adjoining property owner, and implement the cleanup and restoration plan within forty-eight (48) hours of obtaining the adjoining property owner's permission. In no case, unless written approval is received from the City, may more than seven (7) calendar days go by without corrective action being taken. If in the discretion of the City, the permit holder does not repair the damage caused by the erosion, the City may do the remedial work required. When restoration to wetlands and other resources are required, the applicant shall be required to work with the appropriate agency to ensure that the work is done properly.

C. **Erosion into streets, wetlands or water bodies**. If eroded soils (including tracked soils from construction activities) enters streets, wetlands, or other water bodies, cleanup and repair shall be immediate. The applicant shall provide all traffic control and flagging required to protect the traveling public during the cleanup operations.

Subd. 3. Failure to do Corrective Work. When an applicant fails to conform to any provision of this policy within the time stipulated, the City may take the following actions.

A. Issue a stop work order, withhold the scheduling of inspections and/or the issuance of a Certificate of Occupancy.
B. Revoke any permit issued by the City to the applicant for

the site in question or any other of the applicant's sites within the City's jurisdiction.

C. Correct the deficiency or hire a contractor to correct the deficiency. The issuance of a permit constitutes a right-of-entry for the City or its contractor to enter upon the construction site for the purpose of correcting deficiencies in erosion control.

D. Require reimbursement to the City for all costs incurred in correcting stormwater pollution control deficiencies. If payment is not made within thirty (30) days after the City incurs costs, the City will halt all work on the project site and assess any reimbursement costs to the property. As a condition of the permit, the owner shall waive notice of any assessment hearing to be conducted by the City, concur that the benefit to the property exceeds the amount of the proposed assessment, and waive all rights by virtue of Minnesota Statute 429.081 to challenge the amount or validity of assessment.

Subd. 4. Right of Entry and Inspection.

A. **Powers**. The applicant shall allow the City of Alexandria and their authorized representatives, upon presentation of credentials to:

1. Enter upon the permitted site for the purpose of obtaining information, examination of records, conducting investigations or surveys.
2. Bring such equipment upon the permitted development as is necessary to conduct such surveys and investigations.
3. Examine and copy any books, papers, records, or memoranda pertaining to activities or records required to be kept under the terms and conditions of this permitted site.
4. Inspect the stormwater pollution control measures.
5. Sample and monitor any items or activities pertaining to stormwater pollution control measures.

Section 12.09 Development Agreement. A development agreement regarding stormwater management may be required for any project that requires a Stormwater Management Plan. The agreement shall guarantee the performance of the work described and delineated on the approved plan. In addition, the agreement will describe the City's inspection policy. Should the applicant fail to meet any of the terms of the development agreement, the City may proceed with any of the actions listed on Subd.11.B.

Section 12.10 Construction Activities. Construction operations must at a minimum comply with any applicable federal or state permit and stormwater management plan in addition to the following best management practices:

Subd. 1. Site Dewatering: Water pumped from the site shall be treated by temporary sedimentation basins, grit chambers, sand filters, upflow chambers, hydrocyclones, soil concentrators or other appropriate controls as deemed necessary. Water may not be discharged in a manner that causes erosion, sedimentation, or flooding on the site, on downstream properties, in the receiving channels, or in any wetland.

Subd. 2. Waste and Material Disposal: All waste and unused building materials (including garbage, debris, cleaning wastes, wastewater, petroleum based products, paints, toxic materials, or other hazardous materials) shall be properly disposed of off-site and shall not be allowed to be carried by runoff into a receiving channel, storm sewer system, or wetland.

Subd. 3. Tracking Management: Each site shall have roads, access drives and parking areas of sufficient width, length and surfacing to minimize sediment from being tracked onto public or private roadways. Any material deposited by vehicles or other construction equipment onto a public or private road shall be removed (not by flushing) before the end of each working day.

Subd. 4. Water Quality Protection: The construction contractor, including the general contractor and all subcontractors, shall be required to control oil and fuel spills and chemical discharges to prevent such spills or discharges from entering any watercourse, sump, sewer system, water body, or wetland.

Subd. 5. Site Erosion and Sedimentation Control: Construction operations must include erosion and sedimentation control measures meeting accepted design criteria, standards and specifications contained in the Minnesota Stormwater Manual or other standards determined acceptable by the City.

Subd. 6. Concrete Washout Area: All liquids and solid waste generated by concrete washout operations must be contained in a leak-proof containment facility or impermeable liner. A compacted clay liner that does not allow washout liquids to enter ground water is considered an impermeable liner. A sign must be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.

Subd. 7. Storm Drain Protection: All storm drain inlets shall be protected during construction with control measures as contained in the SWPPP. These devices shall remain in place until final stabilization of the site. A regular inspection and maintenance plan shall be developed in implemented to assure these devices are operational at all times. Storm drain protection must conform

to the protection alternatives pre-approved by City Staff and available at City Hall and on the City Website.

Subd. 8. Soil Stockpiling: All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Temporary clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles and the constructed base components of roads are exempt from this requirement.

Section 12.11 Stormwater Management Criteria for Permanent Facilities. All permanent stormwater management plans must be submitted to the City engineer prior to the start of construction activity. Designers are expected to follow the requirements of this section to meet the volume control, water quality, and water quantity requirements of the City of Alexandria. Designs should meet the stormwater design standard of these ordinances and the Minnesota Stormwater Manual. Deviations from the recommended guidance will require detailed written explanation with discretion given by the City. Stormwater control facilities included as part of the final design for a permanent development shall be addressed in the stormwater management plan and shall meet the following criteria:

Subd. 1. Rate Control Requirements: Future discharge rates from new development and redevelopment, resulting in one-half acre or more of new impervious area or one acre or more of disturbed land, will not exceed existing discharge rates for the 2-year, 10-year, and 100-year critical storm events in accordance to the Atlas14 data as shown in the table below:

Event	Rainfall/Snowmelt Depth (inches)
2-year, 24 hour	2.55
10-year, 24 hour	3.69
100-year, 24 hour	5.96
100-year, 10 day snowmelt	8.91

In any area where downstream flooding is a concern the City may require additional rate control. Design calculations for the 2- year, 10-year, and 100-year storm events must be submitted to the City for review and approval. For regional detention or stormwater management system, the city engineer shall recommend a proposed system charge to be administered by the City Council based upon an approved watershed master plan and an analysis of required drainage systems, projected costs and flood protection benefits provided to those properties directly or indirectly impacted by the regional detention or stormwater management system.

Subd. 2. Design of Storage Facilities: The design of stormwater storage facilities shall accommodate a 100-year critical duration rainfall event, with this storage being provided above the normal outlet elevation.

Subd. 3. Design of Lateral and Collector Systems: Lateral and collector systems shall be designed to accommodate a 10-year return frequency storm event. These systems shall be defined as storm sewer that collects and conveys runoff from catch basins or other inlets from a localized drainage area to a trunk system or ponding facility.

Subd. 4. Design of Trunk Systems: Trunk systems shall be designed to convey the anticipated 100-year critical event stormwater flow rate. A trunk system shall be defined as the main channel of the stormwater system that receives water from multiple laterals or collectors or serves as an outlet and downstream conveyance system for a stormwater storage facility. The following table shall be used for the calculation of peak rates using the Rational Method:

Cover Type	Runoff Coefficient
Single-family Residential	0.4
Multi-family Residential	0.5
Commercial	0.7
Industrial	0.7
Parks, Open Space	0.2
Ponds, Wetlands	1.0

Subd. 5. Overland Overflow: An overland overflow should be provided for all lateral, collector, and trunk systems to accommodate the 100-year critical duration rainfall event and prevent structural inundation should an obstruction occur in these systems.

Subd. 6. Clogging Factor: For collection systems not designed to meet rate control standards (e.g. catch basins) a clogging factor of 50% will be utilized in sizing intake structures.

Subd. 7. Rate Control Diameter: No orifice having a diameter less than 4" is allowed in the design of rate control structures within the City. If a lower discharge rate is required a weir may be used to meet the requirements.

Subd. 8. Emergency Spillway: An emergency spillway (emergency outlet) from ponding areas shall be installed a minimum of one foot below the lowest building opening and shall be designed to have a capacity to overflow water at an elevation below the lowest building opening at a rate not less than the anticipated 100-year peak inflow rate to the basin, or three times the 100-year peak discharge rate from the basin, whichever is greater.

Subd. 9. Natural Features of Site: The applicant shall give

consideration to reducing the need for stormwater management system facilities by incorporating the use of natural topography and land cover such as wetlands, ponds, natural swales and depressions as they exist before development to the degree that they can accommodate the additional water flow without compromising the integrity or quality of these natural features.

Subd. 10. Landlocked Basins: Areas with landlocked basins shall be modeled to accommodate a back-to-back 100-year, 24-hour rainfall event and the 100-year, 10-day runoff event. The highest water elevation in the basin from this analysis shall be the 100- year high water level.

Subd. 11. Landlock Basin Outlets: Outlets for landlocked areas will be allowed provided the outlet complies with wetland and floodplain regulations and the basin provides storage below the outlet for either 1) the back-to-back 100-year, 24-hour event or 2) the 100-year, 10-day runoff event; whichever is greater. In addition, there must be no negative downstream impacts resulting from the outlet.

Subd. 12. Flood Protection:

A. Residential, non-residential and other structures shall ordinarily be elevated on fill so that the basement, or first floor if there is no basement, is one (1) foot above the Regulatory Flood Protection Elevation.
B. For areas outside of a floodplain, the lowest floor of a structure, not including boathouse, piers and docks, must be three (3) feet above the highest known water level. In the case where the high water level is unknown, the elevation of the line of permanent shoreland vegetation should be used as the high water elevation.
C. No structure, fill, deposits, obstruction, storage of materials, equipment, or other uses may be allowed in the floodplain that reduces the floodwater storage capacity of the floodplain or increases flood height. Compensating floodwater storage area shall be provided for any obstruction which decreases flood storage. This compensating volume shall be equal to or greater than the total volume of the obstruction. Additional detail is provided in the City's floodplain district.
D. A plan review by the City is required for any project that is within the 100-year floodplain, upland flood storage area, or changes the timing, storage, or carrying capacity of any tributaries in the 100-year floodplain.
E. All areas at or below the 100-year floodplain area on private

property will be covered by a drainage and utility easement or outlot dedicated to the City upon development or redevelopment.

Subd. 13. Water Quality Treatment Standards: Stormwater treatment must be designed to remove 90% of Total Suspended Solids (TSS) on an average annual basis. Treatment can be provided in on-site or regional systems and through permanent ponding, infiltration, filtration, or a combination of BMPs that will meet these requirements. This requirement is anticipated to result in 40-60% Total Phosphorus (TP) removal. The stormwater discharges of TSS and TP shall result in no net increase from pre-project conditions for new development projects. The stormwater discharges of TSS and TP shall result in a net reduction from pre-project conditions for redevelopment projects. Where TSS and/or TP reduction requirements cannot be met on the site of the original construction, the applicant will be required to locate alternative sites where TSS and/or TP treatment standards can be achieved. Mitigation project locations are chosen in the following order of preference:

A. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
B. Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity.
C. Locations in the next adjacent DNR catchment area up- stream.
D. Locations anywhere within the City of Alexandria.

Mitigation projects shall involve the establishment new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP. Previously required routine maintenance of structural stormwater BMPs cannot be considered mitigation. Mitigation projects must be finished within 24 months after the original construction activity begins. A maintenance agreement specifying the responsible party for long- term maintenance shall be identified. Payments will not be accepted in lieu of the construction project meeting the TSS and TP treatment standards.

Subd. 14. Infiltration/Volume Control: Volume control measures are required on projects to meet the water quality criteria of the City and to meet the requirements of the City of Alexandria's MS4 Permit obligations. Except where conditions listed below are not met, stormwater runoff abstraction via infiltration, evapotranspiration, capture, and/or reuse of stormwater runoff is required to treat the water quality volume of one (1) inch (or one (1) inch minus the volume of stormwater treated by another system on the site) of runoff when a development project creates one-half acre or more new impervious surfaces or disturbs one acre or more of land. For new development projects, stormwater discharge volume shall result in no net increase

from pre-project conditions. For redevelopment projects, stormwater discharge volume shall result in a net reduction from pre-project conditions. Runoff must be infiltrated within 48 hours or less. To simplify the review process, no runoff will be assumed from pervious surfaces from a one inch rainfall event.

Infiltration will not be required nor allowed in areas where there are known groundwater contaminants, where the soils are not suitable for infiltration (Hydrologic Soil Group D), or in areas where there is less than three feet of separation between the bottom of the infiltration system and the groundwater. Percolation tests shall be required to verify the infiltration rates of on-site soils following the construction of infiltration BMP's.

Pretreatment of stormwater is required prior to discharge to an infiltration system. This pretreatment shall collect sediment and be easily accessed for inspection and maintenance. The infiltration/filtration system selected must meet the following criteria:

A. Remove settleable solids, floating materials, and oils and grease to the maximum extent practicable before runoff enters the system.
B. Filtration must be designed to remove 90 percent of total suspended solids.
C. Consider the impact of construction and infiltration practices on existing hydrologic features (e.g. existing wetlands) and maintain pre-existing conditions.
D. Consider potential hotspots, groundwater warning, design measures, maintenance considerations or other retention, detention, and treatment devises as specified in the MN Stormwater Manual.
E. The infiltration practice shall not be used within fifty feet of a municipal, community or private well, unless specifically allowed by an approved wellhead protection plan.
F. The infiltration practice shall not be used for runoff from fueling and vehicle maintenance areas and industrial areas with exposed materials posing contamination risk, unless the infiltration practice is designed to allow for spill containment.
G. Ensure the area is not compacted while the site is under construction.
H. The infilatration/filtration area shall be staked and marked so heavy construction vehicles do not compact the soil.
I. To prevent clogging the system shall have a pretreatment device such as a vegetated filter strip, small sedimentation basin, or water quality inlet (e.g. grit chamber) to settle particulates before stormwater discharges into the system.
J. Ensure appropriate on-site testing consistent with the MN

Stormwater Manual is conducted to verify soil type and to ensure a minimum of three (3) feet of separation from the seasonally saturated soils (or bedrock) and the bottom of the proposed system is maintained.

K. Ensure filtration systems with less than three (3) feet of separation form seasonally saturated soils or from bedrock are constructed with an impermeable liner.

L. The infiltration practice shall not be used in Hydrologic Soil Group (HSG) D soils without soil corrections.

M. Provide an eight foot wide maintenance access.

Subd. 15. Permanent Wet Sedimentation and Regional Pond Water Quality Standards: If infiltration practices are not feasible, a permanent water quality pond shall be used to meet water quality and rate control requirements. The pond is required to meet the following criteria. If a pond is designed using this criteria, it will be assumed to meet the City standard of 90% TSS removal and result in approximately 40-60% TP removal.

A. If the drainage area is within one of the following subwatersheds that drains directly to a lake: Agnes- Henry, Burgen, Carlos, Cowdry, Darling, Geneva, Latoka, Le Homme Dieu, Victoria, or Winona, the permanent pool (dead pool) volume below the normal outlet must be greater than or equal to the runoff from a 2.5-inch storm event over the drainage area (see Figure III-5).

B. If the drainage area is within one of the following subwatersheds that drains directly to a wetland: Connie, North Wetlands, SE Wetlands, SW Wetlands, the permanent pool volume must allow for 1,800 cubic feet for each acre that drains to the pool (see Figure III-5).

C. Permanent pool average depth between 3 and 10 feet.

D. The basin must provide live storage for water quality volume of one (1) inch of runoff (or one (1) inch minus the volume of stormwater treated by another system on the site) from the new impervious surfaces created by the project.

E. The basin must minimize scour and the suspension of solids.

F. The basin outlet must be designed to prevent short- circuiting and the discharge of floating debris, and the basin outlet must not discharge one inch of runoff from the impervious watershed area at a rate greater than 5.66 cubic feet per second (cfs) per acre of surface area of the pond.

G. An emergency outlet to control the 100-year storm event.

H. Basin slopes no steeper than 3:1.
I. A basin shelf (10 feet wide and one (1) foot below the normal water level) to enhance wildlife habitat, reduce safety hazards, and improve maintenance access.
J. Flood pool volume above the normal outlet so that peak discharge rates from the 2-year, 10-year, and 100-year storm events are no greater than existing conditions.
K. An eight foot wide maintenance access must be provided.
L. Be located outside of surface waters or any buffer zone.
M. Natural wetlands and waterbodies are not considered a regional stormwater pond and construction will not occur within existing wetlands unless they are mitigated in accordance with the State of Minnesota Wetland Conservation Act.
N. Waterways connected to the pond will not be degraded.
O. Safety considerations will be made in the design of permanent water quality ponds.

Subd. 16. Outlet and Inlet Pipes:

A. Inlet pipes of stormwater ponds shall be extended to the pond normal water level whenever possible.
B. Outfalls with velocities greater than 4 fps into channels requires energy dissipation or stilling basins.
C. Outfalls with velocities of less than 4 fps generally do not require energy dissipaters or stilling basins, but will require riprap protection.
D. In the case of discharge to channels, riprap shall be provided on all outlets to an adequate depth below the channel grade and to a height above the outfall or channel bottom. Riprap shall be placed over a suitably graded filter material with filter fabric to ensure that soil particles do not migrate through the riprap and reduce its stability. Riprap shall be placed to a thickness at least 2 times the mean rock diameter to ensure that it will not be undermined or rendered ineffective by displacement. If riprap is used as protection for overland drainage routes, grouting may be recommended.
E. Discharge velocity into a pond at the outlet elevation shall be 6 fps or less. Riprap protection, or other appropriate energy dissipation practice, is required at all inlet pipes into ponds from the NWL to the pond bottom.
F. Where outlet velocities to ponds exceed 6 fps, the design should be based on the unique site conditions present. Submergence of the outlet or installation of a stilling basin approved by the City is required when erosive

outlet velocities are experienced.

G. Submerged outlet pipes from ponds are not allowed.

Subd. 17. Limitations and Restrictions for Permanent Stormwater Management: The City may limit or restrict the construction of permanent management facilities based on the following criteria.

A. Permanent stormwater management facilities may not receive discharges from or be constructed in areas where:
   1. Industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES Industrial Stormwater permit issued by the MPCA.
   2. Vehicle fueling or maintenance activities occur.
   3. There is less than three feet of separation between the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
   4. There are known groundwater contaminants or groundwater will be mobilized by the construction of infiltration BMPs.

B. For areas where infiltration is prohibited the applicant must consider alternative volume reduction BMPs and the water quality volume must be treated by a wet sedimentation basin, filtration system, regional ponding or similar method prior to the release of stormwater to surface water.

C. For linear projects with lack of right-of-way, easements or other permissions from property owners to install treatment systems that are capable of treating the total water quality volume on site, the project must maximize treatment through other methods or combination of methods before runoff is released to nearby surface waters. Alternative treatment options include: grassed swales, filtration systems, smaller ponds, or grit chambers. In all circumstances, a reasonable attempt must be made to obtain right-of-way during the project planning and all attempts of infeasibility must be recorded.

D. The City may restrict the use of infiltration features to meet post-construction requirements for stormwater management, without higher engineering review, if the infiltration techniques will be constructed in the following areas where:
   1. Soils are predominately Hydrologic Soil Group D (clay) soils.
   2. Drinking Water Supply Management Areas are present, as defined by Minn. R. 4720.51000, subp.13, unless precluded by a local unit of government with an MS4 permit.
   3. Soil infiltration rates are more than 8.3 inches per hour unless soils are amended to flow the infiltration rate

below 8.3 inches per hour.

Sub. 18. Exceptions for Permanent Stormwater Management: The City may authorize reduced volume control for the following situations:

A. If the project meets one of the limitations outlined above.

B. If the applicant implements to the maximum extent possible other volume reduction practices, besides infiltration, on the site but may not meet the requirements for post-construction stormwater management.

Subd. 19. Drainage and Utility Easements: New stormwater management BMPs (e.g. ponds, infiltration systems, swales) constructed as part of private development shall be covered by drainage and utility easements or outlots that are dedicated to the City. Maintenance responsibilities for these areas will be spelled out in a Developer's Agreement. All maintenance agreements must be approved by the City and recorded at the Douglas County ~~r~~Recorder's office prior to final plan approval. At a minimum, the maintenance agreement will describe the following inspection and maintenance obligations:

A. No private stormwater facilities may be approved unless a maintenance plan is provided that defines how access will be provided, who will conduct the maintenance, the type of maintenance and the maintenance intervals. At a minimum, all private stormwater facilities shall be inspected annually and maintained in proper condition consistent with the performance goals for which they were originally designed and as executed in the stormwater facilities maintenance agreement.

B. The party who is permanently responsible for maintenance of the structural and nonstructural measures.

C. Pass responsibilities for such maintenance to successors in title.

D. Allow the City and its representatives the right of entry for the purposes of inspecting all permanent stormwater management systems.

E. Allow the City the right to repair and maintain the facility, if necessary maintenance is not performed after proper and reasonable notice to the responsible party of the permanent stormwater management system.

F. The agreement shall also stipulate that if site configuration or structural stormwater BMPs change, causing decreased structural stormwater BMP effectiveness, new or improved BMPs shall be installed.

G. Access to all stormwater facilities must be inspected annually and maintained as necessary. The applicant shall obtain all

necessary easement or other property interests to allow access to the facilities for inspection or maintenance for both the responsible party and the City of Alexandria.

Subd. 20. Skimmers: The City requires skimmers or other devices, with the intent to remove floatables, in the construction of new pond outlets and the addition of skimmers to existing systems whenever feasible and practical. The designs shall provide for skimmers that extend a minimum of four inches below the water surface and minimize the velocities of water passing under the skimmer to less than 0.5 feet per second for rainfall events having a 99% frequency. Wood skimmers are not allowed.

Subd. 21. Habitat and Aesthetic Enhancement: The City encourages the design of stormwater management features that provide an opportunity to enhance the habitat and aesthetics of the area. This includes providing upland buffers around ponds, seeding the area with native vegetation, and designing the slopes equal to or flatter than 4:1.

Subd.22. Combination of Practices: A combination of successive practices may be used to achieve the applicable minimum control requirements specified. Justification

Section 12.12 <u>Buffer Protection for Wetlands.</u> For all development which changes land use or requires platting, a minimum 10- foot buffer of native vegetation is required around wetlands. Public trails and management of noxious weeds are allowed within the buffer. Planting of non-native species is not allowed within the buffer.

Section 12.13 <u>Stormwater and Urban Runoff Pollution Control.</u>

Subd. 1. Illegal Disposal

A. No person shall throw, deposit, place, leave, maintain, or keep or permit to be thrown, placed, left, maintained or kept, any refuse, rubbish, garbage, or any other discarded or abandoned objects, articles, or accumulations, in or upon any street, alley, sidewalk, storm drain, inlet, catch basin conduit or drainage structure, business place, or upon any public or private plot of land in Alexandria, so that the same might be or become a pollutant, except in containers, recycling bags, or other lawfully established waste disposal facility.

B. No person shall intentionally dispose of grass, leaves, dirt, or other landscape debris into a water resource buffer,

street, road, alley, catch basin, culvert, curb, gutter, inlet, ditch, natural watercourse, flood control channel, canal, storm drain or any fabricated natural conveyance.

Subd. 2. Illicit Discharges and Connection.

A. No person shall throw, drain, or otherwise discharge, cause, or allow others under its control to throw, drain, or otherwise discharge any pollutants or waters containing pollutants, other than stormwater to the municipal storm water system. The following discharges are exempt from discharge prohibitions established by this ordinance:
   1. Water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water;
   2. Discharges or flow from firefighting, and other discharges authorized by the City in writing that are necessary to protect public health and safety;
   3. Discharges associated with dye testing, however this activity requires verbal notification to the City prior to the time of the test;
   4. The prohibition shall not apply to any non-stormwater 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, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and further provided that written approval has been granted for any discharges to the storm drain system.

B. No person shall use any illicit connection to intentionally convey non-storm water to the municipal storm water system.
   1. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under the law or practices applicable or prevailing at the time of the connection.
   2. A person is considered to be in violation of this chapter if the person connects a line conveying sewage to the storm drain system, or allows such connection to continue.

C. The City shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance.

1. The owner or party responsible shall allow the City ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law. Any temporary or permanent obstruction to safe and easy access to the area to be inspected or sampled shall be promptly removed by the discharger at the request of the City and shall not be replaced.
2. If the enforcement officer has been refused access to any part of the premises from which the nuisance is occurring, and the enforcement officer is able to demonstrate probable cause to believe that there may be a violation of this section, or that there is a need to inspect, test, examine or sample as part of a routine program designed to verify compliance with this section or any order issued hereunder, or to protect the overall public health, safety and welfare of the community, then the City may seek issuance of an administrative search warrant from any court of competent jurisdiction.
3. The City may require the discharger to install monitoring equipment or other such devices as are necessary in the opinion of the City to conduct monitoring or sampling of the premises stormwater discharge. The monitoring equipment must be maintained by the discharger in a safe and proper operating condition at all times. All devices used to measure stormwater flow and quality must be calibrated to ensure their accuracy.

D. Upon finding that a person has violated a prohibition of this section, the City may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:
    1. The performance of monitoring, analysis, and reporting;
    2. The elimination of illicit connections or illicit discharges;
    3. The violating discharges, practices, or operations must cease and desist;
    4. The abatement or remediation of stormwater pollution or contamination of hazards and the restoration of any affected premises;
    5. Payment of a fine to cover administrative and remediation costs; and
    6. The implementation of source control or treatment BMPs.

Subd. 3. Good Housekeeping Provisions. Any owner or occupant of property within Alexandria shall comply with the following good housekeeping requirements:

A. No person shall leave, deposit, discharge, dump, or otherwise expose any chemical or septic waste in an area where discharge to streets or storm drain system may occur. This section shall apply to both actual and potential discharges.

B. For pools, water should be allowed to sit seven days to allow for chlorine to evaporate before discharge. If fungicides have been used, water must be tested and approved for discharge to the wastewater treatment plant.

C. Runoff of water from residential property shall be minimized to the maximum extent practicable. Runoff of water from the washing down of paved areas in commercial or industrial property is prohibited unless necessary for health or safety purposes and not in violation of any other provisions in City codes.

D. Every person owning or occupying premises through which a watercourse passes, shall keep and maintain that part of the watercourse within the premises free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or occupant shall maintain existing privately owned structures within or adjacent to a watercourse so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Subd. 4. Storage of Materials, Machinery, and Equipment. Objects, such as motor vehicle parts, containing grease, oil or other hazardous substances, and unsealed receptacles containing hazardous materials, shall not be stored in areas susceptible to runoff. Any machinery or equipment that is to be repaired or maintained in areas susceptible to runoff shall be placed in a confined area to contain leaks, spills, or discharges.

Subd. 5. Removal of Debris and Residue. Debris and residue shall be removed and disposed of properly, as noted below:

A. All motor vehicle parking lots shall be swept, at a minimum of twice a year to remove debris. Such debris shall be collected and disposed of properly. However, parking lots are not required to be swept for one month following a day on which precipitation of one-half inch or more occurs.

B. Fuel and chemical residue or other types of potentially harmful material, such as animal waste, garbage or batteries, which is located in an area susceptible to runoff, shall be removed as soon as possible and disposed of properly.

Household hazardous waste may be disposed of through community collection program or at any other appropriate disposal site and shall not be place in a trash container.

Subd. 6. Notification of Spills.

A. Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into stormwater, the storm drain system, or waters of the state, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials, said person must immediately notify emergency response agencies of the occurrence via emergency dispatch services (911). In the event of a release of nonhazardous materials, said person shall notify the City no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the City within three business days of the personal or phone notice. If the discharge of prohibited materials originates from an industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records must be retained for at least three years.

Section 12.14 Severability. The provisions of this Ordinance are severable, and if any provisions of this Ordinance, or application of any provision of this Ordinance to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Ordinance must not be affected thereby.

Section 12.15 Abrogation and Greater Restrictions. It is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Ordinance imposes greater restrictions, the provisions of this Ordinance shall prevail. All other Ordinances inconsistent with this Ordinance are hereby repealed to the extent of the inconsistency only.

Section 12.16 Enforcement. The City shall be responsible for enforcing this Ordinance.

Section 12.17 Penalties.

A. Any person found to be violating any provision of this ordinance shall be served by the City with written notice

stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations.

B. In the event that the owner fails to correct the situation within the given time period, the City may correct it and collect all such costs together with reasonable attorney fees, or in the alternative, by certifying said costs of correction as any other special assessment upon the land from which said correction of said violation was made.

C. Any person, firm, or corporation failing to comply with or violating any of these regulations, shall be deemed guilty of a misdemeanor and be subject to a fine or imprisonment or both. All land use and building permits must be suspended until the applicant has corrected the violation. Each day that separate violation exists shall constitute a separate offense.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ALEXANDRIA, MINNESOTA HEREBY ORDAINS:

Section I: That Chapter 12 (Storm Water Management Ordinance) be replaced with the new Storm Water Management Ordinance as outlined above, in the Alexandria City Code.

Section II: This Ordinance shall be in full force and effect from and after its passage and publication.

YES: BATESOLE, KUHLMAN, OSTERBERG, JENSEN

NO: NONE

ABSENT: BENSON

/S/ Todd Jensen, President Pro Tempore

ATTEST:

/S/ Martin D. Schultz, City Administrator

ORDINANCE NO. 622
2ND SERIES

AN ORDINANCE AMENDING CITY CODE CHAPTER 10, RELATING TO EROSION AND SEDIMENT CONTROL

WHEREAS, the intent of Chapter 10 of the Alexandria City Ordinance is to protect the public health, safety and general welfare of the community and its people through the establishment of minimum regulations governing development and use; and

WHEREAS, the City of Alexandria recognizes its obligation to protect water quality by controlling the disturbance of soil; and

WHEREAS, as an effort to reduce sedimentation of the public waters and to protect and enhance the water resources and wetlands the City of Alexandria has established feasible and reasonable standards to achieve a level of erosion and sediment control that will minimize damage to property and degradation of water resources and wetlands, and will promote and maintain the health and safety of the citizens of the City of Alexandria.

NOW, THEREFORE, The City Council of the City of Alexandria does hereby **ORDAIN**:

SECTION I: That City Code Section 10.32, is hereby amended by adding the following:

Section 10.32. Erosion and Sediment Control

Subd. 1. Purpose. The purpose of this section is to control or eliminate soil erosion and sedimentation within the City. This article establishes standards and specifications for conservation practices and planning activities that minimize soil erosion and sedimentation.

Subd. 2. Scope and Application. Except as exempted by the definition of the term "land disturbance activity" in Subdivision 3, any person, state agency, or political subdivision thereof proposing land disturbance activity within the city shall apply to the city for the approval of the erosion and sediment control plan. No land shall be disturbed until the plan is approved by the city and conforms to the standards set forth in this article.

In their interpretation and application, the provisions of this article shall be held to be the minimum requirements for the promotion of the public health, safety and general welfare. Where the requirements imposed by any provision of this article are either more restrictive or less restrictive than comparable conditions imposed by any other city ordinance, law, code, statute, or regulation, the regulations that are more restrictive or impose higher standards or requirements shall prevail. Application of this article should be considered in conjunction with other controls regulating land use and waters within the city, including administration of Wetland Conservation Act regulations, administered by the city through its agent, the Douglas County Soil & Water Conservation District (SWCD).

Subd. 3. Definitions. Unless specifically defined below, words or phrases used in this Section shall be interpreted so as to give them the same meaning as they have in common usage and to give this Chapter its most reasonable application. For the purpose of this Chapter, the words "must" and "shall" are mandatory and not permissive. All distances, unless otherwise specified, shall be measured horizontally.

1. **Best Management Practices (BMPs).** Erosion and sediment control practices that are the most effective and practicable means of controlling, preventing, and minimizing the degradation of surface water, including construction-phasing, minimizing the length of time soil areas are exposed, prohibitions, and other management practices published by the state.

2. **Common Plan of Development or Sale**. A contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, or on different schedules, but under one proposed plan. This item is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land disturbing activities may occur.

3. **Developer**. Any person, group, firm, corporation, sole proprietorship, partnership, state agency, or political subdivision thereof engaged in a land disturbance activity.

4. **Development**. Any land disturbance activity that changes the site's runoff characteristics in conjunction with residential, commercial, industrial or institutional construction or alteration.

5. **Erosion**. Any process that wears away the surface of the land by the action of water, wind, ice, or gravity.

6. **Erosion Control.** Refers to methods employed to prevent erosion. Examples include soil stabilization practices, horizontal slope grading, temporary or permanent cover, and construction phasing.

7. **Erosion and Sediment Practice Specifications or Practice.** The management procedures, techniques, and methods to control soil erosion and sedimentation as officially adopted by either the state, county, City or local watershed group, whichever is more stringent.

8. **Exposed Soil Areas.** All areas of the construction site where the vegetation (trees, shrubs, brush, grasses, etc.) or impervious surface has been removed, thus rendering the soil more prone to erosion. This includes topsoil stockpile areas, borrow areas and disposal areas within the construction site.

9. **Final Stabilization.** Means that all soil disturbing activities at the site have been completed, and that a uniform (evenly distributed, e.g., without large bare areas) perennial vegetative cover with a density of seventy (70) percent of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures have been employed.

10. **Land Disturbance Activity.** Any land change that may result in soil erosion from water or wind and the movement of sediments into or upon waters or lands within this government's jurisdiction, including construction, clearing & grubbing, grading, excavating, transporting and filling of land. Within the context of this rule, land disturbance activity does not mean:

a. Minor land disturbance activities such as home gardens and an individual's home landscaping, repairs, and maintenance work, unless such activity exceeds one half acre in exposed soil.

b. Additions or modifications to existing single family structures which

result in creating under one half acre of exposed soil or impervious surface and/or is part of a larger common development plan.

c. Construction, installation, and maintenance of fences, signs, posts, poles, and electric, telephone, cable television, utility lines or individual service connections to these utilities, which result in creating under one half acre of exposed soil or impervious surface.

d. Tilling, planting, or harvesting of agricultural, horticultural, or silvicultural (forestry) crops.

e. Emergency work to protect life, or property and emergency repairs, unless the land disturbing activity would have otherwise required an approved erosion and sediment control plan, except for the emergency. If such a plan would have been required, then the disturbed land area shall be shaped and stabilized in accordance with the City's requirements as soon as possible.

11. **Permanent Cover**. Means "final stabilization." Examples include grass, gravel, asphalt, and concrete. See also the definition of "final stabilization."

12. **Phased Project or Development.** Clearing a parcel of land in distinct phases, with at least fifty percent (50%) of the project's preceding phase meeting the definition of "final stabilization" and the remainder proceeding toward completion, before beginning the next phase of clearing.

13. **Sediment**. The product of an erosion process; solid material both mineral and organic, that is in suspension, is being transported, or has been moved by water, wind, or ice, and has come to rest on the earth's surface either above or below water level.

14. **Sedimentation.** The process or action of depositing sediment.

15. **Sediment Control.** The methods employed to prevent sediment from leaving the development site. Examples of sediment control practices are silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, and temporary or permanent sedimentation basins.

16. **Soil.** The unconsolidated mineral and organic material on the immediate surface of the earth. For the purposes of this document temporary stockpiles of clean sand, gravel, aggregate, concrete or bituminous materials (which have less stringent protection) are not considered "soil" stockpiles.

17. **Stabilized.** The exposed ground surface after it has been covered by sod, erosion control blanket, riprap, pavement or other material that prevents erosion. Simply sowing grass seed is not considered stabilization.

18. **Steep Slope.** Any slope steeper than twelve (12) percent (Twelve (12) feet of rise for every one hundred (100) feet horizontal run).

19. **Temporary Protection.** Short-term methods employed to prevent erosion. Examples of such protection are straw, mulch, erosion control blankets, wood chips, and erosion netting.

Subd. 4. Erosion and Sediment Control Plan.

1. Required. Every applicant for a building permit, subdivision approval, or a grading permit consisting of more than one-half acre of land disturbing activities within the city shall submit an erosion and sediment control plan to the City Engineer. No land shall be disturbed until the plan is approved by the City Engineer and conforms to the standards set forth herein.

All plans shall be consistent with National Pollution Discharge Elimination Permit (NPDES) requirements, and the filing or approval requirements of relevant Watershed Districts, Watershed Management Organizations, Ditch Authorities, Soil and Water Conservation Districts, or other regulatory bodies.

2. General Criteria for Erosion and Sediment Control Plan. An erosion and sediment control plan shall be required for any land disturbing activity larger than one-half acre and shall meet the following criteria:

a. Stabilize all exposed soils and soil stockpiles.
b. Establish permanent vegetation.
c. Prevent sediment damage to adjacent properties and other designed areas.
d. Schedule erosion and sediment control practices.
e. Engineer the construction of steep slopes.
f. Stabilize all waterways and outlets.
g. Protect storm sewers from the entrance of sediment.
h. When working in or crossing water bodies, take precautions to contain sediment.
i. Restabilize utility construction areas as soon as possible.
j. Protect paved roads from sediment and mud brought in from access routes.
k. Dispose of temporary erosion and sediment control measures following final stabilization.
l. Maintain all temporary and permanent erosion and sediment control practices.

3. Contents of Plan. The erosion and sediment control plan shall include the following:

a. Project description: the nature and purpose of the land disturbing activity and the amount of grading involved.
b. Phasing of construction: the nature and purpose of the land disturbing activity and the amount of grading, utilities, and building construction.
c. Project Schedule: A projected timeline for completion of all site activities.
d. Existing site conditions: existing topography, vegetation, and drainage.
e. Adjacent areas, neighboring streams, lakes, residential areas, roads, etc., which might be affected by the land disturbing activity.
f. Critical erosion areas: areas on the site that have potential for serious erosion problems.
g. Erosion and sediment control measures: methods to be used to control erosion and sedimentation on the site, both during and after the construction process.
h. Permanent stabilization: how the site will be stabilized after construction is completed, including specifications.
i. Maintenance: schedule of regular inspections and repair of erosion and sediment control structures.

j. Silt Fence: provisions for the removal of all silt fence upon establishment of permanent vegetation.

4. NPDES Construction Site Permit. Any construction activity that disturbs one or more acres is required to obtain a separate NPDES Construction Site Permit. A copy of this permit and erosion and sediment control plan shall be submitted to the City Engineer.

Subd. 5. Review of Plan. The City Engineer shall complete a review of the erosion and sediment control plan within fourteen (14) calendar days of receiving the plan from the developer.

1. **Permit Required** - If the City determines that the plan meets the requirements of this ordinance, the City shall issue a permit valid for a specified period of time that authorizes the land disturbance activity contingent on the implementation and completion of the plan.

2. **Denial** - If the City determines that the plan does not meet the requirements of this ordinance, the City shall not issue a permit for the land disturbance activity. The plan must be resubmitted for approval before the land disturbance activity begins. All land use and building permits shall be suspended until the developer has an approved plan.

3. **City inspections and enforcement** - The City shall conduct inspections on a regular basis to ensure that the plan is properly installed and maintained. In all cases the inspectors will attempt to work with the builder or developer to maintain proper erosion and sediment control at all sites. . In cases where cooperation is withheld, the City shall issue construction stop work orders, until erosion and sediment control measures meet the requirements of this ordinance. An inspection must follow before work can commence. Inspections are required as follows:

a. Before any land disturbing activity begins
b. For residential construction, at the time of footing inspections
c. At the completion of the project

The City reserves the right to conduct other random inspections during the course of the project to ensure compliance with the plan.

Subd. 6. Modification of Plan. The applicant must amend the erosion and sediment control plan as necessary to include additional requirements such as additional or modified best management practices designed to correct problems identified or address situations whenever:

1. A change in design, construction, operation, maintenance, weather, or seasonal conditions that has a significant effect on the discharge of pollutants to surface waters or underground waters.

2. Inspections indicate the plan is not effective in eliminating or significantly minimizing the discharge of pollutants to surface waters or underground waters or that the discharges are causing water quality standard exceedances.

3. The plan is not achieving the general objectives of controlling pollutants or is not consistent with the terms and conditions of this permit.

Subd. 7. Development Agreement. A development agreement prepared by the City shall be required for any project that requires an erosion and sediment control plan. The agreement shall guarantee the performance of the work described and delineated on the approved

plan. In addition, the agreement will describe the City's inspection policy. Should the applicant fail to meet any of the terms of the development agreement, the City may:

1. **Withhold inspections** - Withhold the scheduling of inspections and/or the issuance of a Certificate of Occupancy.

2. **Revocation of permits** - Revoke any permit issued by the City to the applicant for the site in question or any other of the applicant's sites within the community's jurisdiction.

Subd. 8. Remedial Action. The City may take remedial action if any of the conditions listed below exist. The Development Agreement shall stipulate that the applicant shall reimburse the City for all direct cost incurred in the process of remedial work including, attorney's fees.

1. **Abandonment** - The developer ceases land disturbing activities and/or filling and abandons the work site prior to completion of the grading plan.

2. **Failure to implement plan** - The developer fails to conform to the erosion and sediment control plan as approved by the City.

Subd. 9. Emergency Action. If circumstances exist such that noncompliance with this ordinance poses an immediate danger to the public health, safety and welfare, as determined by the city, the city may take emergency preventative action. The city shall also take every reasonable action possible to contact and direct the applicant to take any necessary action.

Subd. 10. Notification of Failure of the Plan. The City shall notify the permit holder of the failure of the erosion and sediment control plan's measures.

1. **Initial contact**. The initial contact will be to the party or parties listed on the application and/or the plan as contacts. Except during an emergency action, forty-eight (48) hours after notification by the City or seventy-two (72) hours after the failure of erosion control measures, whichever is less, the City at its discretion, may begin corrective work. Such notification should be in writing, but if it is verbal, a written notification should follow as quickly as practical. If after making a good faith effort to notify the responsible party or parties, the City has been unable to establish contact, the City may proceed with corrective work. There are conditions when time is of the essence in controlling erosion. During such a condition the City may take immediate action, and then notify the applicant as soon as possible

2. **Erosion off-site**. If sediment breaches the perimeter of the site, the applicant shall immediately develop a cleanup and restoration plan, obtain the right-of entry from the adjoining property owner, and implement the cleanup and restoration plan within forty-eight (48) hours of obtaining the adjoining property owner's permission. In no case, unless written approval is received from the City, may more than seven (7) calendar days go by without corrective action being taken. If in the discretion of the City, the permit holder does not repair the damage caused by the erosion, the city may do the remedial work required. When restoration to wetlands and other resources are required, the applicant shall be required to work with the appropriate agency to ensure that the work is done properly.

3. **Erosion into streets, wetlands or water bodies**. If eroded soils (including tracked soils from construction activities) enters streets, wetlands, or other water bodies, cleanup and

repair shall be immediate. The applicant shall provide all traffic control and flagging required to protect the traveling public during the cleanup operations.

4. **Failure to do corrective work**. When an applicant fails to conform to any provision of this policy within the time stipulated, the City may take the following actions.

a. Issue a stop work order, withhold the scheduling of inspections, and/or the issuance of a Certificate of Occupancy

b. Revoke any permit issued by the City to the applicant for the site in question or any other of the applicant's sites within the City's jurisdiction.

c. Correct the deficiency or hire a contractor to correct the deficiency. The issuance of a permit constitutes a right-of-entry for the City or its contractor to enter upon the construction site for the purpose of correcting deficiencies in erosion control.

d. Require reimbursement to the City for all costs incurred in correcting stormwater pollution control deficiencies. If payment is not made within thirty (30) days after the City incurs costs, the City will halt all work on the project site and assess any reimbursement costs to the property. As a condition of the permit, the owner shall waive notice of any assessment hearing to be conducted by the City, concur that the benefit to the property exceeds the amount of the proposed assessment, and waive all rights by virtue of Minnesota Statute 429.081 to challenge the amount or validity of assessment.

Subd. 11. Enforcement. The City shall be responsible enforcing this ordinance.

1. **Penalties**. Any person, firm, or corporation failing to comply with or violating any of these regulations, shall be deemed guilty of a misdemeanor and be subject to a fine or imprisonment or both. All land use and building permits must be suspended until the applicant has corrected the violation. Each day that a separate violation exists shall constitute a separate offense.

Subd. 12. Severability. The provisions of this ordinance are severable, and if any provisions of this ordinance, or application of any provision of this ordinance to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this ordinance must not be affected thereby.

Subd. 13. Abrogation and Greater Restrictions. It is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance imposes greater restrictions, the provisions of this ordinance shall prevail. All other ordinances inconsistent with this ordinance are hereby repealed to the extent of the inconsistency only.

SECTION II: This Ordinance shall be in full force and effect from and after its passage and publication.

ADOPTED by the City Council of the City of Alexandria this 14th day of July, 2008, by the following vote:

YES: BIGGER, CARLSON, WEISEL, BENSON, FRANK

NO: NONE

ABSENT: NONE

_____
/S/ H. Dan Ness, Mayor

ATTEST: _____
/S/ James P. Taddei, City Administrator

Minimum Control Measure 4 & 5
Construction Site Erosion and Sediment Control
Post-Construction Stormwater Management

TABLE OF CONTENTS

APPENDICES

1. INTRODUCTION

1.1. Basis for the Standard Operating Procedures (SOPs)

In August 1, 2013, the Minnesota Pollution Control Agency issued a National Pollutant Discharge Elimination System (NPDES) General Permit (GP) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). The MS4 GP requires the City of Alexandria to develop written procedures for the purpose of eliminating pollutants associated with construction activity due to new development and redevelopment on projects with land disturbance of greater than or equal to once acre, including projects that are less than one acre that are part of a common plan of development or sale.

This manual assists the City in meeting the MS4 permit regulations by incorporating guidance on the following:

- Plan review
- Training
- Inspections
- Long-term Operation and Maintenance

The Guidelines and Standard Operating Procedures Manual will help promote behavior to improve the water quality of the City of Alexandria's lakes, ponds, and creeks.

1.2. Objectives of the SOPs

This manual is intended to provide the following guidance on Construction Site Erosion and Sediment Control and Post-Construction Stormwater Management:

- Provide guidance regarding plan review procedures.
- Provide guidance to municipalities for prioritizing where construction site inspections may need to occur on a more frequent basis.
- Provide guidance to municipal staff on what to look for during construction inspections.
- Provide guidance to municipal staff regarding the construction of post-construction stormwater BMPs to help ensure their longevity.
- Provide guidance on how to enforce non-compliant construction sites.
- Provide guidance to municipal staff on proper procedures for BMP operation and maintenance.

2. PLAN REVIEW AND APPROVAL PROCESS

2.1. Plan Review

Activities and Definition

Plans that are submitted to the City for approval will have a review process to guarantee that erosion and sediment control standards and post-construction stormwater standards are being met.

Preparation

a. Review City ordinances (Appendix D - Chapter 10: Erosion & Sediment Control; Chapter 12: Stormwater Management), the Comprehensive Stormwater Management Plan, the MPCA Construction General Permit, and the MS4 post-construction stormwater standards.
b. Reviews of submitted plans, will utilize a checklist to ensure accuracy (Appendix A).

Process

a. The City engineering and planning staff will review plans.
b. A checklist will be used to ensure accuracy and thoroughness of submitted plans (Appendix A).
c. Plans must be approved prior to the start of construction activity.
d. The City will be responsible for enforcement of their stormwater rules as well as MPCA requirements.
e. Notify owner and/or operator of the need to apply for and obtain coverage under the MPCA's general permit to discharge stormwater associated with construction activity.

Follow-up

The City will complete a review of the plan within twenty (20) days of receiving the plan from the developer/owner/operator. If the City determines that the plan meets the requirements of the City's Stormwater Management Ordinance, the City shall issue a permit valid for the specified period of time that authorizes the land disturbance activity contingent on the implementation and completion of the plan. If the City determines that the plan does not meet the requirements of the City's Stormwater Management Ordinance, the City shall not issue a permit for the land disturbance activity. The plan must be resubmitted for approval before the land disturbance activity begins. All land use and building permits shall be suspended until the developer has an approved plan.

Documentation

a. Keep track of plan reviews per calendar year in the Stormwater Permit Binder.

b. Keep copies of plans, BMP quantities, and proposed BMPs that will be provided to inspector or inspecting consultant.
c. Keep a all maintenance agreements that get filed with the City.
d. Keep all calculations done to ensure compliance.

2.2. Training

Activities and Definition

Training of City staff will be important so that they are aware of the importance of good erosion and sediment control practices as well as techniques regarding the proper installation of post-construction stormwater BMPs. This includes knowledge in installation and inspection techniques as well as record keeping and maintenance activities. It is important for City staff to be able to recognize deficiencies in BMPs on construction sites. Inspection staff will be responsible for the tracking and enforcing permit requirements.

Employee training provided by the City will include stormwater 101 training sessions, training received through the University of Minnesota's erosion and sediment control extension, and a hands-on process to discuss the activities that are occurring in the field and how those activities can impact the City's MS4 program. Including employees into the planning process will help them understand that they are part of the solution to improve water quality.

2.3. Inspections

Activities and Definition

Construction site inspections will determine compliance with the City's regulatory mechanism(s).

Preparation

a. Identify priority sites for inspection based on topography, soil characteristics, type of receiving water, stage of construction, compliance history, weather conditions, or other local characteristics and issues.
b. Private projects shall be inspected as prioritization warrants and City projects shall be inspected weekly. All sites shall be inspected after a rainfall event of greater than 0.5 inches in 24 hours.
c. Ensure that City Building Officials, Erosion Control Inspectors, and Street Department staff have received proper training pertaining to Erosion and Sediment Control techniques and Post-Construction Stormwater BMPs.

Process

a. Identify sites that require erosion and sediment control inspection.
b. Provide a copy of Alexandria's Erosion and Sediment Control Field Guidance to the site owner/permittee (Appendix B).
c. Perform inspection using the erosion control inspection form (Appendix C).
d. Document construction activities and follow up with site owner/permittee about findings from inspection. If feasible, prior to leaving the site talk to the responsible person to ensure corrections can be made in a timely fashion.
e. Ensure that plans are kept up-to-date by the owners/operators of construction activity with regards to stormwater runoff control.
f. Perform a follow up inspection of site if deficiencies are found during initial inspection. Ensure that correction items have been completed.
g. Failure to comply with the permit requirements may require initiating enforcement action as described in the City's Enforcement Response Procedures (ERPs) as follows:
    1) Verbal Warning
    2) Notice of Violations
    3) Stop-Work Orders

Documentation

City staff shall record the following items in the Stormwater Permit Binder to track the status of erosion and sediment control violations, enforcement actions and follow-up:

a. Number of inspections.
b. Inspection reports and reports sent.
c. Escalation of penalties.
    1. Verbal Warnings
    2. Notice of Violations
    3. Stop work orders

2.4. Erosion and Sediment Control BMPs

Activities and Definition

City projects that will disturb one-half acre will use proper erosion and sediment control BMPs.

Preparation

a. Provide BMPs for City projects including: inlet protection, perimeter control, temporary and permanent stabilization methods.
b. Ensure staff has University of Minnesota's erosion and sediment control certification and/or have been trained by a certified staff person on proper erosion and sediment control techniques.

Process

a. All construction projects disturbing more than one-half acre will have BMPs installed prior to construction activity (Appendix E)
b. All perimeter control BMPs are required to be fixed, substituted, or enhanced if they are no longer working or sediment fills one-half (1/2) of the height of the BMP.
c. Temporary or permanent sediment basins are required to be drawn down and have sediment removed when the depth of the captured sediment reaches one-half (1/2) the storage volume of the basin.
d. Tracked sediment from the construction site entrance/exit is required to be removed from all paved surfaces both on and off site. This must be done as soon as possible or within 24 hours of being found.
e. Install down gradient perimeter control where needed on the site.
f. Provide inlet protection for adjacent inlets and outlets to prevent sediment and debris from entering the storm sewer.
g. Stabilize all exposed soil areas upon completion of work. If work is not complete, temporary stabilization methods will be used.
h. After work is complete, clean out any sediment that might have entered the MS4 system.
i. Encourage use of structural and non-structural BMPs, structural or hard engineering techniques and bio-engineering.
j. Require wet stormwater detention ponds when surface drainage discharges into receiving waters.
k. Require infiltration ponds when surface drainage discharges into wetland areas.

Documentation

a. Keep all documents showing that BMPs were inspected and properly maintained during the active construction period until the period where final stabilization was achieved.
b. Private projects shall be inspected as prioritization warrants and City projects shall be inspected weekly. All projects shall be inspected at least as listed below as well as after a rainfall event greater than 0.5 inches in 24 hours.
    i. Before any land disturbing activity begins,
    ii. For residential construction, at the time of footing inspections, and
    iii. At the completion of the project.
c. Document maintenance performed on:
    i. Perimeter Control
    ii. Inlet Protection
    iii. Erosion Control BMPs
    iv. Stabilization Performed
    v. Sediment Control BMPs

d. If applicable, record the amount of waste collected, the number of catch basins cleaned, and the area they were cleaned in. Keep any notes or comments of any problems.
e. If applicable, document the final location of where the material was disposed and any paperwork received from the disposal location.

2.5. Private Projects Post Construction Stormwater Management

Activities and Definition

Private projects that require a building permit, demolition permit, grading/excavation, and tree removal permit will use proper erosion and sediment control BMPs. Depending on the proposed improvements these sites may also be required to install BMPs for post-construction stormwater management. Building officials will be responsible for inspecting building permit activities. Engineering staff will be responsible for inspecting sites that require a state NPDES permit.

The City requires an erosion control plan for land disturbing activities greater than one-half acre within the City.

The City has staff that actively inspects construction sites throughout the City's jurisdiction. The City also oversees the installation of BMPs for post-construction stormwater management.

Process

Any Private projects that are within the City limits will be inspected by a qualified City employee. Inspections will occur at a frequency that is commensurate of the activities taking place. The field inspector should use the erosion and sediment control inspection form (Appendix C). Using a standardized checklist for inspections will create consistency amoung all inspectors.

Documentation

a. Keep track of private project locations and obtain contact information for owners and operators on file at the City.
b. Keep records of long-term maintenance agreements on file at the City (Appendix G).
c. Keep records of inspections should the City be required to perform work for non-compliance.
d. Keep records of penalties.
    1. Verbal Warnings
    2. Notice of Violation
    3. Stop Work Orders

2.6. Private Projects Long-Term Operation and Maintenance

All BMPs installed for the purpose of meeting the post-construction stormwater management standard are required to develop maintenance agreements and maintenance plans that are recorded with Douglas County (Appendix F & G). After the maintenance agreement is executed, the City is required to ensure the conditions for post-construction stormwater management continue to be met.

Preparation

a. Develop a reporting mechanism (i.e. worksheet, questionnaire, etc.) for owners of post-construction stormwater BMPs.

Process

a. Once during each MS4 permit cycle request applicants to fill out and return the post-construction stormwater BMP reporting mechanism.
b. If any applicants do not return their reporting mechanism to the City, the City may inspect the post-construction stormwater BMP on behalf of the applicant and bill the property owner for administrative costs incurred.
c. Notify all owners of post-construction stormwater BMPs with deficiencies and require repair within 4 months.
d. If any owners of post-construction stormwater BMPs with deficiencies are not repaired within 4 months of notification, the City may complete the repairs and bill the property owner for such repairs.

Documentation

a. Keep files of all maintenance agreements that are filed with the City, along with their BMP locations.
b. Annually update the GIS system to include all public and private storm sewer and post-construction stormwater BMPs installed within the City.
c. Obtain as-built plans for all public and private post-construction stormwater BMPs that are installed within the City.
d. Keep copies of returned reporting mechanisms and inspection reports on file for at least three years, should the City be required to perform maintenance for non-compliance.

APPENDIX A
Plan Review Checklist

City Of Alexandria
Stormwater Management Review Checklist

Project Name:			
Address:			
Owner/Operator:			
Permit No:		**Date Approved:**	
Date Received:		**Signature:**	
Site Size (acres):		**Area of Disturbance (acres):**	
Existing Impervious(acres):		**Proposed Impervious (acres):**	
Additional documents/comments provided by permittee, attached (if applicable)			

Submittals Received

Date	Document	Author

General:

- ☐ Certified construction plans/details.
- ☐ SWPPP with ERC details, quantities.
- ☐ Certified Drainage Summary Report, with narrative.
- ☐ Hydrologic Design Summary with methods and models.
- ☐ Land Feature Changes Summary.
- ☐ Impaired waters assessment, location map.
- ☐ Pre and Post project drainage area maps.
- ☐ Pre and Post Runoff Rate Summaries.
- ☐ Pre and Post Hydraulic Grade Line Summaries 2, 10 and 100 year events for storm piping and conveyance features.
- ☐ Pre and Post peak bounce elevations 2, 10 and 100 year events, ultimate relief evaluation.
- ☐ Assessment of Risk with respect to proposed FFE. Existing infrastructure per ordinance RFPE plus one foot requirement.
- ☐ BMPs to minimize erosion.
- ☐ BMPs to minimize the discharge of sediment and other pollutants.
- ☐ BMPs for dewatering activities.

Wet Permanent Practice:

- ☐ Routing calculations, WQ, 2, 10 and 100 year event.
- ☐ Performance Summaries, WQ, 2, 10 and 100 year event. Emergency overflow elevation.
- ☐ Practice geometry, dimensions, elevations, details.
- ☐ Outlet control details, dimensions elevations, sizes, material type.
- ☐ Energy dissipation.
- ☐ Property lines, Easement, R/O/W.
- ☐ O & M responsibility, Access.

Volume Reduction/Filtration:

- ☐ Design Infiltration rate/supporting documentation.
- ☐ Practice geometry, dimensions, elevations, details.
- ☐ Pre-treatment techniques, details.
- ☐ Performance Summaries, WQ, 2, 10 and 100 year event. Drawdown time, emergency overflow elevation/ ultimate relief.
- ☐ Practice protection during construction.
- ☐ Post construction design infiltration rate test and confirmation results.
- ☐ Energy dissipation.
- ☐ Property lines, easement, R/O/W.
- ☐ O & M responsibility, Access.

Wetlands:

- ☐ Delineated wetlands shown on plan set.
- ☐ 10' Wetland Buffer per ordinance shown.
- ☐ Wetland Impact/Mitigation documentation provided.

APPENDIX B
Alexandria's Erosion and Sediment Control Field Guidance

Erosion and Sediment Control
Field Guidance

Concrete Washout:

- ☐ Is there a dedicated, contained, and maintained area for concrete washout?

Conformance to the permitted/approved plan set:

- ☐ Is the project following the permitted/approved plan set?
- ☐ Are field changes documented on the plan set and properly communicated to the necessary regulatory agencies?

Conformance to approved construction sequencing/phasing:

- ☐ Is the project following the accepted/approved construction sequence?
- ☐ Is phasing of the project being conducted to minimize disturbance?

Erosion Control Inspector (ECI):

- ☐ If the site requires an NPDES Construction General Permit:
  - o Is the ECI maintaining a routine inspection schedule: weekly and after all 0.5" rain events?
  - o Is the ECI inspection log on site and readily available?
  - o Are current site conditions representative of the latest ECI inspection report?
  - o Do the ECI inspection reports and SWPPP adequately cover recommendations for corrective measures?
  - o Are the ECI reports indicative of a thorough and competent inspection?

Detention facility plantings:

- ☐ Is native vegetation planted in all permitted areas?
- ☐ Is the observed vegetation the desired species?
- ☐ Do plantings appear healthy and well-established?
- ☐ Has permanent stabilization of the detention basin been achieved, i.e. 70% coverage?
- ☐ Is erosion control blanket installed correctly, i.e. up and down the slope; keyed in at top of slope.

Erosion and Sediment Control
Field Guidance

Detention facility emergency overflow location and construction:

- ☐ Is the emergency overflow constructed to the size/shape/location/elevation of the permitted/approved plan set?
- ☐ Is the emergency overflow effectively armored (C350, rip-rap, etc.), per the permitted/approved plan set, to resist scouring or undermining due to high volume/high velocity flows?

Dewatering:

- ☐ Is turbid or sediment-laden water directed to a temporary or permanent sedimentation basin before discharging into a surface water (unless impracticable)?
- ☐ If water cannot be discharged to a sedimentation basin before entering a surface water, is it treated so that it does not cause nuisance conditions downstream (i.e., oil-water separator)?
- ☐ Has the discharge been visually checked before it enters a waterway or wetland?
- ☐ Are appropriate dewatering BMPs in place and functioning effectively?
- ☐ If a sediment bag is being used, is it capturing sediment effectively?
- ☐ Are discharge points protected from erosion and scour?

Ditch checks:

- ☐ Are ditch checks installed at all locations shown on the permitted plans?
- ☐ Are ditch checks installed properly? (i.e., is spacing correct? Anchored correctly?)
- ☐ Are no straw bales or silt fence being improperly used as ditch checks?

Dust control:

- ☐ Are dust control measures being used as needed?
- ☐ Is no dust observed moving offsite due to wind?
- ☐ Are roadways being swept and vacuumed when needed?

APPENDIX C
Erosion and Sediment Control Inspection Form

Monitoring of Environmental Compliance
SWPPP Implementation

Client: City of Alexandria	**Project Name:** XXXXXXXX
Date: XXXX , 2016	**Time:** __:__ to __:__
Project Location: _____ Alexandria, MN 56308	**Permit #:** SW-
Inspector: Gene Berger	**Weather:** __ Degrees F, _____
Type of Inspection: Random	**Rainfall Amount:** Since last Inspection __:__ Last 24 hours __:__

NOTE: This is the first Erosion Control Inspection for this site.

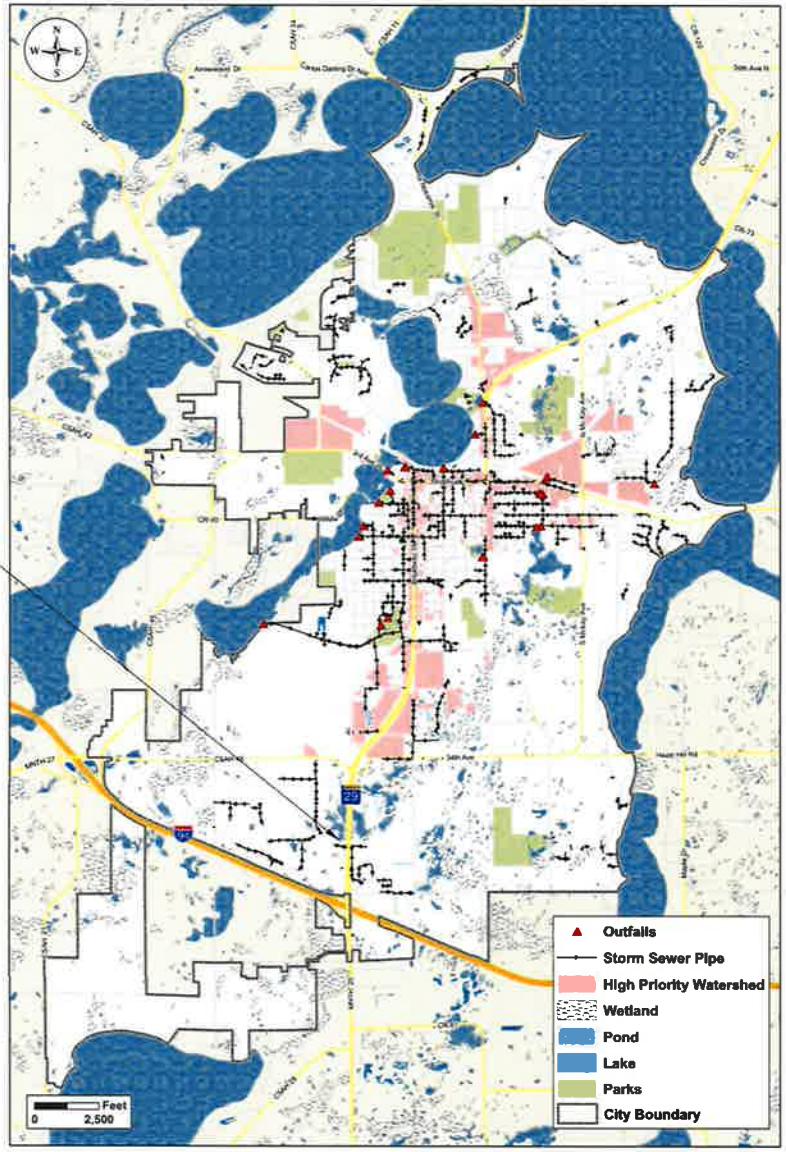
Leader Text Legend

TS -	Timing Sensitivity (Low - Medium - High)
S -	Station or Location
D/T/CA -	Permit Requirement - Description / Task / Corrective Action Needed
AWI -	Additional Wetland Impact
DOO -	Date of Original Observation
CA/CD -	Corrective Action / Noted Observation Date
SCA -	Status of Corrective Action
P -	Photo

Sediment and Erosion Control Legend

- Down Gradient Perimeter Control Installed (ie. Biorolls, Wood Mulch Berm, Silt Fence, Etc.)
- Permanent Erosion Control Installed (ie. ECBlanket - Rip Rap)

PROJECT LOCATION



WIDSETH SMITH NOLTING
Engineering | Architecture | Surveying | Environmental

MINNERATH ADDITION
CITY OF ALEXANDRIA
COMPLIANCE INSPECTION
ENVIRONMENTAL COMPLIANCE REPORT - MAY 31, 2016

SHEET NO 1
SHEET 1 of 4

City of Alexandria
Erosion and Sediment Control Inspection Form

	BMP	Complaint?	Maintenance Required?	Corrective Action(s) Needed & Notes	Date Corrected
1.	Perimeter controls are installed/maintained?	☐ Yes ☐ No	☐ Yes ☐ No		
2.	Natural Features are protected with a BMP?	☐ Yes ☐ No	☐ Yes ☐ No		
3.	Storm drain inlets are properly protected?	☐ Yes ☐ No	☐ Yes ☐ No		
4.	Stockpiles protected and not placed in a conveyance?	☐ Yes ☐ No	☐ Yes ☐ No		
5.	Construction entrance prevents tracking?	☐ Yes ☐ No	☐ Yes ☐ No		
6.	Trash/litter collected and contained?	☐ Yes ☐ No	☐ Yes ☐ No		
7.	Non-active disturbed areas are stabilized?	☐ Yes ☐ No	☐ Yes ☐ No		
8.	Discharge points are free of sediment deposits?	☐ Yes ☐ No	☐ Yes ☐ No		
9.	Washout facilities are available/used?	☐ Yes ☐ No	☐ Yes ☐ No		
10.	Vehicle fueling areas are free of leaks and spills?	☐ Yes ☐ No	☐ Yes ☐ No		
11.	Potential contaminants are protected?	☐ Yes ☐ No	☐ Yes ☐ No		
12.	Any evidence of discharge?	☐ Yes ☐ No	☐ Yes ☐ No		
13.	Portable toilets are upright and secure?	☐ Yes ☐ No	☐ Yes ☐ No		

	BMP	Complaint?	Maintenance Required?	Corrective Action(s) Needed & Notes	Date Corrected
14.	Dewatering activities are using appropriate BMPs to avoid scour and selected chemicals are suited to soil types?	☐ Yes ☐ No	☐ Yes ☐ No		
15.	SWPPP is on site and up-to-date?	☐ Yes ☐ No	☐ Yes ☐ No		
16.	Inspection reports are available?	☐ Yes ☐ No	☐ Yes ☐ No		
17.	Training documentation is available?	☐ Yes ☐ No	☐ Yes ☐ No		
18.	Final stabilization upon completion of construction activity?	☐ Yes ☐ No	☐ Yes ☐ No		
19.	Other:	☐ Yes ☐ No	☐ Yes ☐ No		
20.	Other:	☐ Yes ☐ No	☐ Yes ☐ No		

Additional Comments:

APPENDIX D
Ordinances

ORDINANCE NO. 722
2ND SERIES

AN ORDINANCE AMENDING ORDINANCE NO. 656, 2ND SERIES, TO REPLACE THE EXISTING CHAPTER 12 (STORM WATER MANAGEMENT ORDINANCE) IN ITS ENTIRETY WITH A NEW STORM WATER MANAGEMENT ORDINANCE

WHEREAS, the City Council of the City of Alexandria desires to adopt a new Storm Water Management Ordinance in accordance with the Minnesota Pollution Control Agency Municipal Separate Storm Sewer System 2015 permit update; and

WHEREAS, the City Council of the City of Alexandria desires to make Chapter 12 in the Alexandria City Code the new Storm Water Management Ordinance:

Section 12.01 General Provisions

Subd. 1. Statutory Authorization and General Policy. This Ordinance is adopted pursuant to the authorization and policies contained in Minnesota Statutes Chapters 103B, 105, 462, and 497, Minnesota Rules, Parts 6120.2500-6120.3900, and Minnesota Rules Chapters 8410 and 8420 and goals and policies contained in the most recent Comprehensive Stormwater Management Plan for the City of Alexandria.

Subd. 2. Purpose. The purpose of this Ordinance is to set forth the minimum requirements for stormwater management that will diminish threats to public health, safety, public and private property and natural resources of the City by establishing performance standards including:

A. Protect life and property from dangers and damages associated with flooding.
B. Protect public and private property from damage resulting from runoff or erosion.
C. Control the annual runoff rates from post development site conditions to match the annual runoff rates from predevelopment site conditions.
D. Promote site design that minimizes the generation of stormwater and maximizes pervious areas for stormwater treatment.
E. Promote regional stormwater management by watershed.
F. Provide a single, consistent set of performance standards that apply to all developments.
G. Protect water quality from nutrients, pathogens, toxics, debris and thermal stress.
H. Promote infiltration and groundwater recharge.

I. Provide a vegetated corridor (buffer) to protect water resources from development.
J. Protect or improve the water quality of local lakes, wetlands and water bodies.
K. Protect and enhance fish, wildlife and habitat and recreational opportunities.
L. Control runoff volumes resulting from development within designated sub-watersheds through appropriate infiltration practices.

Subd. 3. Scope. No person shall develop any land for residential, commercial, industrial, or institutional uses without having provided stormwater management measures that control or manage runoff from such developments as provided in this Section.

Section 12.02 Definitions. Unless specifically defined below, words or phrases used in this Section shall be interpreted so as to give them the same meaning as they have in common usage and to give this Section its most reasonable application. For the purpose of this Section, the words "must" and "shall" are mandatory and not permissive. All distances, unless otherwise specified, shall be measured horizontally.

A. **Applicant** - Any person or group that applies for a building permit, subdivision approval, or a permit to allow land disturbing activities. Applicant also means that person's agents, employees, and others acting under this person's or group's direction. The term "applicant" also refers to the permit holder or holders and the permit holder's agents, employees, and others acting under this person's or group's direction.

B. **Best Management Practice (BMP)** - Best management practice is a technique or series of techniques which are proven to be effective in controlling runoff, erosion and sedimentation.

C. **Buffer** - A regulated area where scrutiny will be exercised over activities near wetlands and water bodies and a non-disturbance area where natural vegetation must be maintained.

D. **Common Plan of Development or Sale** - A contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, or on different schedules, but under one proposed plan. This item is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land

disturbing activities may occur.

E. **Developer** - Any person, group, firm, corporation, sole proprietorship, partnership, state agency, or political subdivision thereof engaged in a land disturbance activity.

F. **Development** - Any land disturbance activity that changes the site's runoff characteristics in conjunction with residential, commercial, industrial or institutional construction or alteration.

G. **Dewatering** - The removal of water for construction activity. It can be a discharge of appropriated surface or groundwater to dry and/or solidify a construction site. It may require Minnesota Department of Natural Resources permits to be appropriated and if contaminated may require other Minnesota Pollution Control Agency (MPCA) permits to be discharged.

H. **Discharge** - The release, conveyance, channeling, runoff, or drainage, of storm water including snowmelt, from a construction site.

I. **Energy Dissipation** - This refers to methods employed at pipe outlets to prevent erosion. Examples include, but are not limited to; aprons, riprap, splash pads, and gabions that are designed to prevent erosion.

J. **Erosion** - Any process that wears away the surface of the land by the action of water, wind, ice, or gravity.

K. **Erosion Control** - Refers to methods employed to prevent erosion. Examples include soil stabilization practices, horizontal slope grading, temporary or permanent cover, and construction phasing.

L. **Exposed Soil Areas** - All areas of the construction site where the vegetation (trees, shrubs, brush, grasses, etc.) or impervious surface has been removed, thus rendering the soil more prone to erosion. This includes topsoil stockpile areas, borrow areas and disposal areas within the construction site. It does not include temporary stockpiles or surcharge areas of clean sand, gravel, concrete or bituminous, which have less stringent protection. Once soil is exposed, it is considered "exposed soil," until it meets the definition of "final stabilization."

M. **Filter Strips** - A vegetated section of land designed to treat runoff as overland sheet flow. Their dense vegetated

cover facilitates pollutant removal and infiltration.

N. **Final Stabilization** - Means that all soil disturbing activities at the site have been completed, and that a uniform (evenly distributed, e.g., without large bare areas) perennial vegetative cover with a density of seventy (70) percent of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures have been employed. Simply sowing grass seed is not considered final stabilization. Where agricultural land is involved, such as when pipelines are built on crop or range land, final stabilization constitutes returning the land to its preconstruction agricultural use.

For individual lots in residential construction by either: (a) The homebuilder completing final stabilization as specified above, or (b) the homebuilder establishing temporary stabilization including perimeter controls for an individual lot prior to occupation of the home by the homeowner and informing the homeowner of the need for, and benefits of, final stabilization. (Homeowners typically have an incentive to put in the landscaping functionally equivalent to final stabilization as quick as possible to keep mud out of their homes and off sidewalks and driveways.); or

For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land) final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to surface waters and drainage systems, and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization criteria in (a) or (b) above.

O. **Hydric Soils** - Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

P. **Hydrophytic Vegetation** - Macrophytic (large enough to be observed by the naked eye) plant life growing in water, soil or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Q. **Illicit Discharge** - Any direct or indirect non- stormwater discharges to the storm drain system, except exempted in

Section 12.13 of this Ordinance.

R. **Illicit Connection** - Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including, but not limited to, any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by the City; or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by the City.

S. **Impervious Surface** - A constructed hard surface that either prevents or retards the entry of water into the soil, and causes water to run off the surface in greater quantities and at an increased rate of flow than existed prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.

T. **Land Disturbance Activity** - Any land change that may result in soil erosion from water or wind and the movement of sediments into or upon waters or lands within this government's jurisdiction, including construction, clearing & grubbing, grading, excavating, transporting and filling of land. Within the context of this Section, land disturbance activity does not mean: Minor land disturbance activities such as home gardens and an individual's home landscaping, repairs, and maintenance work, unless such activity exceeds one half acre in exposed soil. Additions or modifications to existing single family structures which result in creating under one half acre of exposed soil or impervious surface and/or is part of a larger common development plan. Construction, installation, and maintenance of fences, signs, posts, poles, and electric, telephone, cable television, utility lines or individual service connections to these utilities, which result in creating under one half acre of exposed soil or impervious surface. Tilling, planting, or harvesting of agricultural, horticultural, or silvicultural (forestry) crops. Emergency work to protect life, limb, or property and emergency repairs, unless the land disturbing activity would have otherwise required an approved erosion and sediment control plan, except for the emergency. If such a plan would have been

required, then the disturbed land area shall be shaped and stabilized in accordance with the City's requirements as soon as possible.

U. **Land Locked Basin** – Defined as a low area such as a lake, pond, or wetland entirely surrounded by land with no regularly active outlet channel.

V. **Large Site Construction Activity** - Includes clearing, grading or excavation that disturbs one (1) or more acres or less than five acres of total land area that is part of a larger common plan of development or sale if the larger common plan will disturb five (5) acres or more.

W. **National Pollutant Discharge Elimination System (NPDES)** - The program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits under the Clean Water Act (Sections 301, 318, 402, and 405) and United States Code of Federal Regulations Title 33, Sections 1317, 1328, 1342, and 1345.

X. **Native Vegetation** - The presettlement (already existing in Minnesota at the time of statehood in 1858) group of plant species native to the local region, that were not introduced as a result of European settlement or subsequent human introduction.

Y. **Non-Stormwater Discharge** - Any discharge to the storm drain system that is not composed entirely of stormwater.

Z. **Ordinary High Water Mark** - The boundary of public waters and wetlands, and shall be an elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel. For reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.

AA. **Owner** - The person or party possessing the title of the land on which the construction activities will occur; or if the construction activity is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the construction activity.

BB. **Paved Surface** - A constructed hard, smooth surface made of

asphalt, concrete or other pavement material. Examples include, but are not limited to, roads, sidewalks, driveways and parking lots.

CC. **Permanent Cover** - Means "final stabilization." Examples include grass, gravel, asphalt, and concrete. See also the definition of "final stabilization."

DD. **Permit** - Within the context of this Section a "permit" is a written warrant or license granted for construction, subdivision approval, or to allow land disturbing activities.

EE. **Phased Project or Development** - Clearing a parcel of land in distinct phases, with at least fifty percent (50%) of the project's preceding phase meeting the definition of "final stabilization" and the remainder proceeding toward completion, before beginning the next phase of clearing.

FF. **Prohibited Discharge** - Any substance which, when discharged has potential to or does any of the following: (1) Interferes with state designated water uses; (2) Obstructs or causes damage to waters of the state; (3) Changes water color, odor, or usability as a drinking water source through causes not attributable to natural stream processes affecting surface water or subsurface processes affecting groundwater; (4) Adds an unnatural surface film on the water; (5) Adversely changes other chemical, biological, thermal, or physical condition, in any surface water or stream channel; (6) Degrades the quality of ground water; or (7) Harms human life, aquatic life, or terrestrial plant and wildlife. This includes but is not limited to dredged soil, solid waste, incinerator residue, garbage, wastewater sludge, chemical waste, biological materials, radioactive materials, rock, sand, dust, industrial waste, sediment, nutrients, toxic substance, pesticide, herbicide, trace metal, automotive fluid, petroleum-based substance, and oxygen-demanding material.

GG. **Saturated Soil** - The highest seasonal elevation in the soil that is in a reduced chemical state because of soil voids being filled with water. Saturated soil is evidenced by the presence of redoximorphic features or other information.

HH. **Sediment** - The product of an erosion process; solid material both mineral and organic, that is in suspension, is being transported, or has been moved by water, wind, or ice, and has come to rest on the earth's surface either above or below water level.

II. **Sedimentation** - The process or action of depositing sediment.

JJ. **Sediment Control** - The methods employed to prevent sediment from leaving the development site. Examples of sediment control practices are silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, and temporary or permanent sedimentation basins.

KK. **Small Site Construction Activity** - Includes clearing, grading or excavation, that disturbs one-half acre (½) to one (1) acre, or less than one (1) acre of total land area that is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre.

LL. **Soil** - The unconsolidated mineral and organic material on the immediate surface of the earth. For the purposes of this document temporary stockpiles of clean sand, gravel, aggregate, concrete or bituminous materials (which have less stringent protection) are not considered "soil" stockpiles.

MM. **Stabilized** - The exposed ground surface after it has been covered by sod, erosion control blanket, riprap, pavement or other material that prevents erosion. Simply sowing grass seed is not considered stabilization.

NN. **Steep Slope** - Any slope steeper than twelve (12) percent (Twelve (12) feet of rise for every one hundred (100) feet horizontal run).

OO. **Storm Drain System** - The city-owned facilities by which stormwater is collected or conveyed, including, but not limited to, any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

PP. **Stormwater** - Under Minnesota Rule 7077.0105, subpart 41b stormwater, "means precipitation runoff, stormwater runoff, snow melt runoff, and any other surface runoff and drainage. Stormwater does not include construction site dewatering.

QQ. **Stormwater Management Plan (also referred to as Stormwater Pollution Prevention Plan SWPPP)** - A joint stormwater and erosion and sediment control plan that is a document containing the requirements of this Section, that when implemented will decrease soil erosion on a parcel of land and off-site nonpoint pollution. It may involve both temporary and permanent

controls.

RR. **Stormwater Manual** - The most recent version of the Minnesota Pollution Control Agency (MPCA) Minnesota Stormwater Manual. This Manual is the compilation of design, performance, and review criteria approved by the by the City for stormwater management practices.

SS. **Structure** - Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, roads, parking lots, and paved storage areas.

TT. **Subdivision** - Any tract of land divided into building lots for private, public, commercial, industrial, etc. development.

UU. **Surface Water** - All streams, lakes, ponds marches, wetlands, reservoirs, springs, rivers, drainage systems, waterways, watercourses and irrigation systems whether natural or artificial public or private.

VV. **Temporary Erosion Protection** - Short-term methods employed to prevent erosion. Examples of such protection are straw, mulch, erosion control blankets, wood chips, and erosion netting.

WW. **Vegetated or Grassy Swale** - A vegetated earthen channel that conveys storm water, while treating the stormwater by biofiltration. Such swales remove pollutants by both filtration and infiltration.

XX. **Waters of the State** - As defined in Minnesota Statutes section 115.01, subdivision 22 the term „waters of the state" means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof."

YY. **Wet Detention Facility** - Depressions constructed by excavation and embankment procedures to store excess runoff temporarily on a site. After a runoff event, overflow from the pond is released at a controlled rate by an outlet device designed to release flows at various peak rates and elevations until the design elevation of the pool is reached. Wet detention facilities maintain a permanent pool of water between storm events. Wet detention facilities are located to collect stormwater inflows from adjacent

drainage areas and are usually designed to control peak discharges from relatively large design storms.

ZZ. **Wetland -** As defined in Minnesota Rules 7050.0130, subpart F, ". . . 'wetlands' are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Constructed wetlands designed for wastewater treatment are not waters of the state.

Section 12.03 **Management of Site Vegetation.** Any landowner shall provide for the installation and maintenance of vegetation on their property in accordance with the following criteria, regardless as to whether or not a stormwater management plan, stormwater permit has been approved or is necessary under this Section. Failure to comply with this section shall constitute a violation and subject the landowner to the enforcement provisions, penalties and noncompliance actions outlined in this Section.

A. **Use of Impervious Surfaces:** No person shall apply items included in the definition of "prohibited discharge" on impervious surfaces or within stormwater drainage systems with impervious liners or conduits.

B. **Unimproved Land Areas:** Except for driveways, sidewalks, patios, areas occupied by structures, landscaped areas, or areas that have been otherwise improved, all areas shall be covered by plants or vegetative growth.

C. **Use of Pervious Surfaces:** No person shall deposit grass clippings, leaves, or other vegetative materials, with the exception of normal mowing or weed control, within natural or manmade watercourses, wetlands, or within wetland buffer areas. No person shall deposit items included in the definition of "prohibited discharge" except as noted above.

Section 12.04 **Stormwater Management Plans and Permits.**

A. **Required.** A stormwater management plan and permit shall be required, and all construction site erosion and sediment control provisions of this permit shall apply, to all land disturbing activities associated with construction activity, as defined in this Section.

1 Every applicant for a building permit that involves disturbing ½ acre or more of land, subdivision approval, or other permit to allow ½ acre or more land disturbing activities must submit a stormwater management plan (also referred to as a Stormwater Pollution Prevention Plan - SWPPP) to the City. No land shall be disturbed nor shall any building permit, subdivision approval, or permit to allow land disturbing activities shall be issued until approval of this plan.

2 All plans, excepting those required as a part of small site construction activity, shall be consistent with National Pollution Discharge Elimination Permit (NPDES) requirements, and the filing or approval requirements of the Douglas County Soil and Water Conservation District or other regulatory bodies. All stormwater mitigation and management technologies shall be consistent with the most recent version of the Minnesota Pollution Control Agency (MPCA) General Stormwater Permit for Construction Activity and the Minnesota Stormwater Manual. This Manual is the compilation of design, performance, and review criteria approved by the City for stormwater management practices.

Section 12.05 <u>Stormwater Management Plan Submittal Requirements.</u>

Subd. 1. Small Site Construction Application. Small site construction projects shall be developed and in compliance with a stormwater management plan that includes the following:

A. Two sets of clearly legible copies of permit submittals and required information shall be submitted to the City and shall be accompanied by all applicable fees.
B. Drawings shall be prepared to a scale appropriate to the site of the project and suitable for the review to be performed. At a minimum, the scale shall be 1 inch equals 50 feet.
C. Included on all submittals shall be the project name and the date of preparation.
D. Also included on all submittals shall be:
   1. Names, addresses and phone numbers of the land surveyor, and engineer, if any.
   2. Property boundaries.
   3. Area(s) to be disturbed.
   4. Spot elevations of proposed grades in relation to existing grades on the subject property and adjacent properties.
   5. Drainage arrows depicting water movement.
   6. Areas where finished slope will be steeper than 5:1

shall be noted.

7. Location and type of erosion/sediment control devices.
8. Location of storm drains, wetlands, sediment ponds and lakes.
9. Location of material stockpiles.
10. Plan for temporary site stabilization.
11. Plan for final site stabilization.
12. Temporary rock entrance location.
13. Name of individual responsible for installation and maintenance of control devices.
14. Any other information pertinent to the particular project that, in the opinion of the City, is necessary for the review of the project.

Subd. 2. Large Site Construction Application. Large Site Construction Projects shall be consistent with the most recent version of the Minnesota Pollution Control Agency's NPDES General Stormwater Permit for Construction Activity and include the minimum requirements:

A. Identification and description including:
   1. Project name.
   2. Project type (residential, commercial, industrial, road construction, or other).
   3. Project location
   4. Parcel identification number (legal description).
   5. Names and addresses of the record owner, developer, land surveyor, engineer, designer and any agents, contractors, and subcontractors who will be responsible for project implementation.
   6. Identification of the entity responsible for long term maintenance of the project. This includes a maintenance plan and schedule for all permanent stormwater practices.
   7. Phasing of construction with estimated start date, time frames and schedules for each construction phase, and completion date.
   8. Copies of permits or permit applications required by any other governmental entity or agencies including mitigation measures required as a result of any review for the project (e.g. wetland mitigation, EAW, EIS, archaeology survey, etc.).

B. Existing Conditions - A complete site plan and specifications, signed by a person who is certified to design the plan shall be drawn to an easily legible scale, shall be clearly labeled with a north arrow and a date of preparation, and shall include, at a minimum, the following information:

1. Project map - An 8.5 by 11 inch United States Geological Survey (USGS) 7.5 minute quad or equivalent map indicating site boundaries and existing elevations.
2. Property lines and lot dimensions.
3. Existing zoning classifications for land within and abutting the development, including shoreland, floodway, flood fringe, or general floodplain, and other natural resource overlay districts.
4. All buildings and outdoor uses including all dimensions and setbacks.
5. All public and private roads, interior roads, driveways and parking lots.
6. Identify all natural and artificial water features (including drain tiles that would affect the project site) on site and within one (1) mile of project boundary, including, but not limited to lakes, ponds, streams (including intermittent streams), and ditches. Show ordinary high water

   marks of all navigable waters, 100-year flood elevations and delineated wetland boundaries, if any. If not available, appropriate flood zone determination or wetland delineation, or both, may be required at the applicant's expense.
7. Map of watershed drainage areas, soil types, infiltration rates, depth to bedrock, and depth to seasonal high water table.
8. Steep slopes where areas of 12% or more existing over a distance for 50 feet or more.
9. Bluff areas where the slope rises at least 25 feet above the toe of the bluff and the grade of the slope from the toe of the bluff to a point 25 feet or more above the toe of the bluff averages 30% or greater.
10. Wooded area and tree survey as defined by the zoning authority.
11. Agricultural Land preservation area(s), County Biological Survey sites, or other officially designated natural resource.
12. Hydrologic calculations for volume runoff, velocities, and peak flow rates by watershed, for the 2-yr, 10-yr, and 100-yr 24-hour storm events. These shall include: p re-existing peak flow rates, a ssumed runoff curve numbers, time of concentration used in calculations, and the 100 - year flood elevation with and without the floodway if a flood insurance study has been done by the National Flood Insurance Program.

C. Bankfull discharge rate (1.5 year recurrence interval) of creek or stream if there is a waterway on the site or if the site discharges directly to the waterway.

D. Proposed Conditions - A complete site plan and specifications, signed by the person who designed the plan shall be drawn to an easily legible scale, shall be clearly labeled with a north arrow and a date of preparation, and shall include, at a minimum, the following information:

1. Project map - An 8.5 by 11 inch United States Geological Survey (USGS) 7.5 minute quad or equivalent map indicating site boundaries, proposed elevations, and areas not to be disturbed;
2. Property lines and lot dimensions of plat.
3. The dimensions and setbacks of all buildings and easements.
4. The location and area of all proposed impervious surfaces including public and private roads, interior roads, driveways, parking lots, pedestrian ways, and rooftops. Show all traffic patterns and types of paving and surfacing materials.
5. Location, size, and approximate grade of proposed public sewer and water mains.
6. Elevations, sections, profiles, and details as needed to describe all natural and artificial features of the project.
7. Identify all natural and artificial water features on site and within one (1) mile of project boundary, including, but not limited to lakes, ponds, streams (including intermittent streams), and ditches. Show ordinary high water marks of all navigable waters, 100-year flood elevations and delineated wetland boundaries, if any. If not available, appropriate flood zone determination or wetland delineation, or both, may be required at the applicant's expense.
8. Location and engineered designs for structural stormwater management practices including stormwater treatment devices that remove oil and floatable material (e.g., basin outlets with submerged entrances).
9. Normal water level, high water level, and emergency overflow elevations for the site.
10. For discharges to cold water fisheries, a description and plans to control temperature from stormwater runoff.
11. Floodway and flood fringe boundary, if available.
12. Any other information pertinent to the particular project that, in the opinion of the City, is necessary for the review of the project.

E. All proposed stormwater practices, hydrologic models, and design methodologies shall be reviewed by the City and certified for compliance by the City in accordance with their plans and specifications.

F. A detailed schedule indicating dates and sequence of land alteration activities; implementation, maintenance and removal of erosion and sedimentation control measures; and permanent site stabilization measures shall be provided.

G. A detailed description of how erosion control, sediment control and soil stabilization measures implemented pursuant to the plan will be monitored, maintained and removed. The plan must identify a person knowledgeable and experienced in erosion and sediment control who will oversee the implementation of the plan and the installation, inspection, and maintenance of the temporary and permanent stormwater management system. This person shall have completed an approved training and certification program.

Subd. 3. Permit Transfer. A permit runs with the property it covers, until the permitted activities are completed, and is transferable to new landowners in its entirety or by parcel, with each parcel being subject to the permit and any conditions that apply to that parcel. In the event land under such a permit is transferred or conveyed in fee, such transfer or conveyance must be reported in writing to the City and the new landowner within 7 days of the transfer. This section refers to City-issued permits and does not release the permittee or owner from transfer requirements of a NPDES permit.

Section 12.06 <u>Stormwater Management Plan Review Procedures.</u>

Subd. 1. Review Timeframe. The City will complete a review of the plan within twenty (20) days of receiving the plan from the developer.

Subd. 2. Meeting Requirements. If the City determines that the plan meets the requirements of this Ordinance, the City shall issue a permit valid for a specified period of time that authorizes the land disturbance activity contingent on the implementation and completion of the plan.

Subd. 3. Not Meeting Requirements. If the City determines that the plan does not meet the requirements of this Ordinance, the City shall not issue a permit for the land disturbance activity. The plan must be resubmitted for approval before the land disturbance activity begins. All land use and building permits shall be suspended until the developer has an approved plan.

Subd. 4. Amendments. The applicant must amend the plan as necessary to include additional requirements such as additional

or modified BMPs designed to correct problems identified or address situations whenever:

A. A change in design, construction, operation, maintenance, weather, or seasonal conditions that has a significant effect on the discharge of pollutants to surface waters or underground waters.

B. Inspections indicate the plan is not effective in eliminating or significantly minimizing the discharge of pollutants to surface waters or underground waters or that the discharges are causing water quality standard exceedances.

C. The plan is not achieving the general objectives of controlling pollutants or is not consistent with the terms and conditions of the permit.

Section 12.07 Waivers. The City Council, upon recommendation of the City Engineer, may waive a requirement of this Ordinance upon making a finding that the alternate design of the application will not adversely affect the standards of this Ordinance and the waiver of such requirement will not adversely affect the standards and requirements set forth in this Ordinance. The City Council may require as a condition of the waiver, such dedication or construction, or agreement to dedicate or construct as may be necessary to adequately meet said standards and requirements.

Section 12.08 Stormwater Management Plan Inspections and Enforcement.

Subd. 1. Inspections. The City will conduct inspections on a regular basis to ensure that the plan is properly installed and maintained. In all cases the inspectors will attempt to work with the builder or developer to maintain proper erosion and sediment control at all sites. In cases where cooperation is withheld, the City shall issue construction stop work orders, until erosion and sediment control measures meet the requirements of this Ordinance. An inspection must follow before work can commence. Inspections are required as follows:

A. Before any land disturbing activity begins.
B. For residential construction, at the time of footing, framing and final inspections.
C. At the completion of the project.
D. Prior to the release of any financial securities, if applicable.
E. Random inspections during the course of the project to ensure compliance with the SWPPP, including after a storm event greater than 0.5 inches over 24 hours.

Subd. 2. Notification of Failure of the SWPPP. The City shall notify the permit holder of the failure of the SWPPP's measures.

A. **Initial contact**. The initial contact will be to the party or parties listed on the application and/or the plan as contacts. Except during an emergency action, forty-eight (48) hours after notification by the City or seventy-two (72) hours after the failure of erosion control measures, whichever is less, the City at its discretion, may begin corrective work. Such notification should be in writing, but if it is verbal, a written notification should follow as quickly as practical. If after making a good faith effort to notify the responsible party or parties, the City has been unable to establish contact, the City may proceed with corrective work. There are conditions when time is of the essence in controlling erosion. During such a condition the City may take immediate action, and then notify the applicant as soon as possible.

B. **Erosion off-site**. If erosion breaches the perimeter of the site, the applicant shall immediately develop a cleanup and restoration plan, obtain the right-of entry from the adjoining property owner, and implement the cleanup and restoration plan within forty-eight (48) hours of obtaining the adjoining property owner's permission. In no case, unless written approval is received from the City, may more than seven (7) calendar days go by without corrective action being taken. If in the discretion of the City, the permit holder does not repair the damage caused by the erosion, the City may do the remedial work required. When restoration to wetlands and other resources are required, the applicant shall be required to work with the appropriate agency to ensure that the work is done properly.

C. **Erosion into streets, wetlands or water bodies**. If eroded soils (including tracked soils from construction activities) enters streets, wetlands, or other water bodies, cleanup and repair shall be immediate. The applicant shall provide all traffic control and flagging required to protect the traveling public during the cleanup operations.

Subd. 3. Failure to do Corrective Work. When an applicant fails to conform to any provision of this policy within the time stipulated, the City may take the following actions.

A. Issue a stop work order, withhold the scheduling of inspections and/or the issuance of a Certificate of Occupancy.
B. Revoke any permit issued by the City to the applicant for

the site in question or any other of the applicant's sites within the City's jurisdiction.

C. Correct the deficiency or hire a contractor to correct the deficiency. The issuance of a permit constitutes a right-of-entry for the City or its contractor to enter upon the construction site for the purpose of correcting deficiencies in erosion control.

D. Require reimbursement to the City for all costs incurred in correcting stormwater pollution control deficiencies. If payment is not made within thirty (30) days after the City incurs costs, the City will halt all work on the project site and assess any reimbursement costs to the property. As a condition of the permit, the owner shall waive notice of any assessment hearing to be conducted by the City, concur that the benefit to the property exceeds the amount of the proposed assessment, and waive all rights by virtue of Minnesota Statute 429.081 to challenge the amount or validity of assessment.

Subd. 4. Right of Entry and Inspection.

A. **Powers**. The applicant shall allow the City of Alexandria and their authorized representatives, upon presentation of credentials to:

1. Enter upon the permitted site for the purpose of obtaining information, examination of records, conducting investigations or surveys.
2. Bring such equipment upon the permitted development as is necessary to conduct such surveys and investigations.
3. Examine and copy any books, papers, records, or memoranda pertaining to activities or records required to be kept under the terms and conditions of this permitted site.
4. Inspect the stormwater pollution control measures.
5. Sample and monitor any items or activities pertaining to stormwater pollution control measures.

Section 12.09 <u>Development Agreement.</u> A development agreement regarding stormwater management may be required for any project that requires a Stormwater Management Plan. The agreement shall guarantee the performance of the work described and delineated on the approved plan. In addition, the agreement will describe the City's inspection policy. Should the applicant fail to meet any of the terms of the development agreement, the City may proceed with any of the actions listed on Subd.11.B.

Section 12.10 <u>Construction Activities.</u> Construction operations must at a minimum comply with any applicable federal or state permit and stormwater management plan in addition to the following best management practices:

Subd. 1. Site Dewatering: Water pumped from the site shall be treated by temporary sedimentation basins, grit chambers, sand filters, upflow chambers, hydrocyclones, soil concentrators or other appropriate controls as deemed necessary. Water may not be discharged in a manner that causes erosion, sedimentation, or flooding on the site, on downstream properties, in the receiving channels, or in any wetland.

Subd. 2. Waste and Material Disposal: All waste and unused building materials (including garbage, debris, cleaning wastes, wastewater, petroleum based products, paints, toxic materials, or other hazardous materials) shall be properly disposed of off-site and shall not be allowed to be carried by runoff into a receiving channel, storm sewer system, or wetland.

Subd. 3. Tracking Management: Each site shall have roads, access drives and parking areas of sufficient width, length and surfacing to minimize sediment from being tracked onto public or private roadways. Any material deposited by vehicles or other construction equipment onto a public or private road shall be removed (not by flushing) before the end of each working day.

Subd. 4. Water Quality Protection: The construction contractor, including the general contractor and all subcontractors, shall be required to control oil and fuel spills and chemical discharges to prevent such spills or discharges from entering any watercourse, sump, sewer system, water body, or wetland.

Subd. 5. Site Erosion and Sedimentation Control: Construction operations must include erosion and sedimentation control measures meeting accepted design criteria, standards and specifications contained in the Minnesota Stormwater Manual or other standards determined acceptable by the City.

Subd. 6. Concrete Washout Area: All liquids and solid waste generated by concrete washout operations must be contained in a leak-proof containment facility or impermeable liner. A compacted clay liner that does not allow washout liquids to enter ground water is considered an impermeable liner. A sign must be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities.

Subd. 7. Storm Drain Protection: All storm drain inlets shall be protected during construction with control measures as contained in the SWPPP. These devices shall remain in place until final stabilization of the site. A regular inspection and maintenance plan shall be developed in implemented to assure these devices are operational at all times. Storm drain protection must conform

to the protection alternatives pre-approved by City Staff and available at City Hall and on the City Website.

Subd. 8. Soil Stockpiling: All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Temporary clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles and the constructed base components of roads are exempt from this requirement.

Section 12.11 Stormwater Management Criteria for Permanent Facilities. All permanent stormwater management plans must be submitted to the City engineer prior to the start of construction activity. Designers are expected to follow the requirements of this section to meet the volume control, water quality, and water quantity requirements of the City of Alexandria. Designs should meet the stormwater design standard of these ordinances and the Minnesota Stormwater Manual. Deviations from the recommended guidance will require detailed written explanation with discretion given by the City. Stormwater control facilities included as part of the final design for a permanent development shall be addressed in the stormwater management plan and shall meet the following criteria:

Subd. 1. Rate Control Requirements: Future discharge rates from new development and redevelopment, resulting in one-half acre or more of new impervious area or one acre or more of disturbed land, will not exceed existing discharge rates for the 2-year, 10-year, and 100-year critical storm events in accordance to the Atlas14 data as shown in the table below:

Event	Rainfall/Snowmelt Depth (inches)
2-year, 24 hour	2.55
10-year, 24 hour	3.69
100-year, 24 hour	5.96
100-year, 10 day snowmelt	8.91

In any area where downstream flooding is a concern the City may require additional rate control. Design calculations for the 2- year, 10-year, and 100-year storm events must be submitted to the City for review and approval. For regional detention or stormwater management system, the city engineer shall recommend a proposed system charge to be administered by the City Council based upon an approved watershed master plan and an analysis of required drainage systems, projected costs and flood protection benefits provided to those properties directly or indirectly impacted by the regional detention or stormwater management system.

Subd. 2. Design of Storage Facilities: The design of stormwater storage facilities shall accommodate a 100-year critical duration rainfall event, with this storage being provided above the normal outlet elevation.

Subd. 3. Design of Lateral and Collector Systems: Lateral and collector systems shall be designed to accommodate a 10-year return frequency storm event. These systems shall be defined as storm sewer that collects and conveys runoff from catch basins or other inlets from a localized drainage area to a trunk system or ponding facility.

Subd. 4. Design of Trunk Systems: Trunk systems shall be designed to convey the anticipated 100-year critical event stormwater flow rate. A trunk system shall be defined as the main channel of the stormwater system that receives water from multiple laterals or collectors or serves as an outlet and downstream conveyance system for a stormwater storage facility. The following table shall be used for the calculation of peak rates using the Rational Method:

Cover Type	Runoff Coefficient
Single-family Residential	0.4
Multi-family Residential	0.5
Commercial	0.7
Industrial	0.7
Parks, Open Space	0.2
Ponds, Wetlands	1.0

Subd. 5. Overland Overflow: An overland overflow should be provided for all lateral, collector, and trunk systems to accommodate the 100-year critical duration rainfall event and prevent structural inundation should an obstruction occur in these systems.

Subd. 6. Clogging Factor: For collection systems not designed to meet rate control standards (e.g. catch basins) a clogging factor of 50% will be utilized in sizing intake structures.

Subd. 7. Rate Control Diameter: No orifice having a diameter less than 4" is allowed in the design of rate control structures within the City. If a lower discharge rate is required a weir may be used to meet the requirements.

Subd. 8. Emergency Spillway: An emergency spillway (emergency outlet) from ponding areas shall be installed a minimum of one foot below the lowest building opening and shall be designed to have a capacity to overflow water at an elevation below the lowest building opening at a rate not less than the anticipated 100-year peak inflow rate to the basin, or three times the 100-year peak discharge rate from the basin, whichever is greater.

Subd. 9. Natural Features of Site: The applicant shall give

consideration to reducing the need for stormwater management system facilities by incorporating the use of natural topography and land cover such as wetlands, ponds, natural swales and depressions as they exist before development to the degree that they can accommodate the additional water flow without compromising the integrity or quality of these natural features.

Subd. 10. Landlocked Basins: Areas with landlocked basins shall be modeled to accommodate a back-to-back 100-year, 24-hour rainfall event and the 100-year, 10-day runoff event. The highest water elevation in the basin from this analysis shall be the 100- year high water level.

Subd. 11. Landlock Basin Outlets: Outlets for landlocked areas will be allowed provided the outlet complies with wetland and floodplain regulations and the basin provides storage below the outlet for either 1) the back-to-back 100-year, 24-hour event or 2) the 100-year, 10-day runoff event; whichever is greater. In addition, there must be no negative downstream impacts resulting from the outlet.

Subd. 12. Flood Protection:

A. Residential, non-residential and other structures shall ordinarily be elevated on fill so that the basement, or first floor if there is no basement, is one (1) foot above the Regulatory Flood Protection Elevation.
B. For areas outside of a floodplain, the lowest floor of a structure, not including boathouse, piers and docks, must be three (3) feet above the highest known water level. In the case where the high water level is unknown, the elevation of the line of permanent shoreland vegetation should be used as the high water elevation.
C. No structure, fill, deposits, obstruction, storage of materials, equipment, or other uses may be allowed in the floodplain that reduces the floodwater storage capacity of the floodplain or increases flood height. Compensating floodwater storage area shall be provided for any obstruction which decreases flood storage. This compensating volume shall be equal to or greater than the total volume of the obstruction. Additional detail is provided in the City's floodplain district.
D. A plan review by the City is required for any project that is within the 100-year floodplain, upland flood storage area, or changes the timing, storage, or carrying capacity of any tributaries in the 100-year floodplain.
E. All areas at or below the 100-year floodplain area on private

property will be covered by a drainage and utility easement or outlot dedicated to the City upon development or redevelopment.

Subd. 13. Water Quality Treatment Standards: Stormwater treatment must be designed to remove 90% of Total Suspended Solids (TSS) on an average annual basis. Treatment can be provided in on-site or regional systems and through permanent ponding, infiltration, filtration, or a combination of BMPs that will meet these requirements. This requirement is anticipated to result in 40-60% Total Phosphorus (TP) removal. The stormwater discharges of TSS and TP shall result in no net increase from pre-project conditions for new development projects. The stormwater discharges of TSS and TP shall result in a net reduction from pre-project conditions for redevelopment projects. Where TSS and/or TP reduction requirements cannot be met on the site of the original construction, the applicant will be required to locate alternative sites where TSS and/or TP treatment standards can be achieved. Mitigation project locations are chosen in the following order of preference:

A. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
B. Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity.
C. Locations in the next adjacent DNR catchment area up- stream.
D. Locations anywhere within the City of Alexandria.

Mitigation projects shall involve the establishment new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP. Previously required routine maintenance of structural stormwater BMPs cannot be considered mitigation. Mitigation projects must be finished within 24 months after the original construction activity begins. A maintenance agreement specifying the responsible party for long- term maintenance shall be identified. Payments will not be accepted in lieu of the construction project meeting the TSS and TP treatment standards.

Subd. 14. Infiltration/Volume Control: Volume control measures are required on projects to meet the water quality criteria of the City and to meet the requirements of the City of Alexandria's MS4 Permit obligations. Except where conditions listed below are not met, stormwater runoff abstraction via infiltration, evapotranspiration, capture, and/or reuse of stormwater runoff is required to treat the water quality volume of one (1) inch (or one (1) inch minus the volume of stormwater treated by another system on the site) of runoff when a development project creates one-half acre or more new impervious surfaces or disturbs one acre or more of land. For new development projects, stormwater discharge volume shall result in no net increase

from pre-project conditions. For redevelopment projects, stormwater discharge volume shall result in a net reduction from pre-project conditions. Runoff must be infiltrated within 48 hours or less. To simplify the review process, no runoff will be assumed from pervious surfaces from a one inch rainfall event.

Infiltration will not be required nor allowed in areas where there are known groundwater contaminants, where the soils are not suitable for infiltration (Hydrologic Soil Group D), or in areas where there is less than three feet of separation between the bottom of the infiltration system and the groundwater. Percolation tests shall be required to verify the infiltration rates of on-site soils following the construction of infiltration BMP's.

Pretreatment of stormwater is required prior to discharge to an infiltration system. This pretreatment shall collect sediment and be easily accessed for inspection and maintenance. The infiltration/filtration system selected must meet the following criteria:

A. Remove settleable solids, floating materials, and oils and grease to the maximum extent practicable before runoff enters the system.
B. Filtration must be designed to remove 90 percent of total suspended solids.
C. Consider the impact of construction and infiltration practices on existing hydrologic features (e.g. existing wetlands) and maintain pre-existing conditions.
D. Consider potential hotspots, groundwater warning, design measures, maintenance considerations or other retention, detention, and treatment devises as specified in the MN Stormwater Manual.
E. The infiltration practice shall not be used within fifty feet of a municipal, community or private well, unless specifically allowed by an approved wellhead protection plan.
F. The infiltration practice shall not be used for runoff from fueling and vehicle maintenance areas and industrial areas with exposed materials posing contamination risk, unless the infiltration practice is designed to allow for spill containment.
G. Ensure the area is not compacted while the site is under construction.
H. The infilatration/filtration area shall be staked and marked so heavy construction vehicles do not compact the soil.
I. To prevent clogging the system shall have a pretreatment device such as a vegetated filter strip, small sedimentation basin, or water quality inlet (e.g. grit chamber) to settle particulates before stormwater discharges into the system.
J. Ensure appropriate on-site testing consistent with the MN

Stormwater Manual is conducted to verify soil type and to ensure a minimum of three (3) feet of separation from the seasonally saturated soils (or bedrock) and the bottom of the proposed system is maintained.

K. Ensure filtration systems with less than three (3) feet of separation form seasonally saturated soils or from bedrock are constructed with an impermeable liner.

L. The infiltration practice shall not be used in Hydrologic Soil Group (HSG) D soils without soil corrections.

M. Provide an eight foot wide maintenance access.

Subd. 15. Permanent Wet Sedimentation and Regional Pond Water Quality Standards: If infiltration practices are not feasible, a permanent water quality pond shall be used to meet water quality and rate control requirements. The pond is required to meet the following criteria. If a pond is designed using this criteria, it will be assumed to meet the City standard of 90% TSS removal and result in approximately 40-60% TP removal.

A. If the drainage area is within one of the following subwatersheds that drains directly to a lake: Agnes- Henry, Burgen, Carlos, Cowdry, Darling, Geneva, Latoka, Le Homme Dieu, Victoria, or Winona, the permanent pool (dead pool) volume below the normal outlet must be greater than or equal to the runoff from a 2.5-inch storm event over the drainage area (see Figure III-5).

B. If the drainage area is within one of the following subwatersheds that drains directly to a wetland: Connie, North Wetlands, SE Wetlands, SW Wetlands, the permanent pool volume must allow for 1,800 cubic feet for each acre that drains to the pool (see Figure III-5).

C. Permanent pool average depth between 3 and 10 feet.

D. The basin must provide live storage for water quality volume of one (1) inch of runoff (or one (1) inch minus the volume of stormwater treated by another system on the site) from the new impervious surfaces created by the project.

E. The basin must minimize scour and the suspension of solids.

F. The basin outlet must be designed to prevent short- circuiting and the discharge of floating debris, and the basin outlet must not discharge one inch of runoff from the impervious watershed area at a rate greater than 5.66 cubic feet per second (cfs) per acre of surface area of the pond.

G. An emergency outlet to control the 100-year storm event.

H. Basin slopes no steeper than 3:1.
I. A basin shelf (10 feet wide and one (1) foot below the normal water level) to enhance wildlife habitat, reduce safety hazards, and improve maintenance access.
J. Flood pool volume above the normal outlet so that peak discharge rates from the 2-year, 10-year, and 100-year storm events are no greater than existing conditions.
K. An eight foot wide maintenance access must be provided.
L. Be located outside of surface waters or any buffer zone.
M. Natural wetlands and waterbodies are not considered a regional stormwater pond and construction will not occur within existing wetlands unless they are mitigated in accordance with the State of Minnesota Wetland Conservation Act.
N. Waterways connected to the pond will not be degraded.
O. Safety considerations will be made in the design of permanent water quality ponds.

Subd. 16. Outlet and Inlet Pipes:

A. Inlet pipes of stormwater ponds shall be extended to the pond normal water level whenever possible.
B. Outfalls with velocities greater than 4 fps into channels requires energy dissipation or stilling basins.
C. Outfalls with velocities of less than 4 fps generally do not require energy dissipaters or stilling basins, but will require riprap protection.
D. In the case of discharge to channels, riprap shall be provided on all outlets to an adequate depth below the channel grade and to a height above the outfall or channel bottom. Riprap shall be placed over a suitably graded filter material with filter fabric to ensure that soil particles do not migrate through the riprap and reduce its stability. Riprap shall be placed to a thickness at least 2 times the mean rock diameter to ensure that it will not be undermined or rendered ineffective by displacement. If riprap is used as protection for overland drainage routes, grouting may be recommended.
E. Discharge velocity into a pond at the outlet elevation shall be 6 fps or less. Riprap protection, or other appropriate energy dissipation practice, is required at all inlet pipes into ponds from the NWL to the pond bottom.
F. Where outlet velocities to ponds exceed 6 fps, the design should be based on the unique site conditions present. Submergence of the outlet or installation of a stilling basin approved by the City is required when erosive

outlet velocities are experienced.

G. Submerged outlet pipes from ponds are not allowed.

Subd. 17. Limitations and Restrictions for Permanent Stormwater Management: The City may limit or restrict the construction of permanent management facilities based on the following criteria.

A. Permanent stormwater management facilities may not receive discharges from or be constructed in areas where:
   1. Industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES Industrial Stormwater permit issued by the MPCA.
   2. Vehicle fueling or maintenance activities occur.
   3. There is less than three feet of separation between the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
   4. There are known groundwater contaminants or groundwater will be mobilized by the construction of infiltration BMPs.

B. For areas where infiltration is prohibited the applicant must consider alternative volume reduction BMPs and the water quality volume must be treated by a wet sedimentation basin, filtration system, regional ponding or similar method prior to the release of stormwater to surface water.

C. For linear projects with lack of right-of-way, easements or other permissions from property owners to install treatment systems that are capable of treating the total water quality volume on site, the project must maximize treatment through other methods or combination of methods before runoff is released to nearby surface waters. Alternative treatment options include: grassed swales, filtration systems, smaller ponds, or grit chambers. In all circumstances, a reasonable attempt must be made to obtain right-of-way during the project planning and all attempts of infeasibility must be recorded.

D. The City may restrict the use of infiltration features to meet post-construction requirements for stormwater management, without higher engineering review, if the infiltration techniques will be constructed in the following areas where:
   1. Soils are predominately Hydrologic Soil Group D (clay) soils.
   2. Drinking Water Supply Management Areas are present, as defined by Minn. R. 4720.51000, subp.13, unless precluded by a local unit of government with an MS4 permit.
   3. Soil infiltration rates are more than 8.3 inches per hour unless soils are amended to flow the infiltration rate

below 8.3 inches per hour.

Sub. 18. Exceptions for Permanent Stormwater Management: The City may authorize reduced volume control for the following situations:

A. If the project meets one of the limitations outlined above.

B. If the applicant implements to the maximum extent possible other volume reduction practices, besides infiltration, on the site but may not meet the requirements for post-construction stormwater management.

Subd. 19. Drainage and Utility Easements: New stormwater management BMPs (e.g. ponds, infiltration systems, swales) constructed as part of private development shall be covered by drainage and utility easements or outlots that are dedicated to the City. Maintenance responsibilities for these areas will be spelled out in a Developer's Agreement. All maintenance agreements must be approved by the City and recorded at the Douglas County ~~r~~Recorder's office prior to final plan approval. At a minimum, the maintenance agreement will describe the following inspection and maintenance obligations:

A. No private stormwater facilities may be approved unless a maintenance plan is provided that defines how access will be provided, who will conduct the maintenance, the type of maintenance and the maintenance intervals. At a minimum, all private stormwater facilities shall be inspected annually and maintained in proper condition consistent with the performance goals for which they were originally designed and as executed in the stormwater facilities maintenance agreement.

B. The party who is permanently responsible for maintenance of the structural and nonstructural measures.

C. Pass responsibilities for such maintenance to successors in title.

D. Allow the City and its representatives the right of entry for the purposes of inspecting all permanent stormwater management systems.

E. Allow the City the right to repair and maintain the facility, if necessary maintenance is not performed after proper and reasonable notice to the responsible party of the permanent stormwater management system.

F. The agreement shall also stipulate that if site configuration or structural stormwater BMPs change, causing decreased structural stormwater BMP effectiveness, new or improved BMPs shall be installed.

G. Access to all stormwater facilities must be inspected annually and maintained as necessary. The applicant shall obtain all

necessary easement or other property interests to allow access to the facilities for inspection or maintenance for both the responsible party and the City of Alexandria.

Subd. 20. Skimmers: The City requires skimmers or other devices, with the intent to remove floatables, in the construction of new pond outlets and the addition of skimmers to existing systems whenever feasible and practical. The designs shall provide for skimmers that extend a minimum of four inches below the water surface and minimize the velocities of water passing under the skimmer to less than 0.5 feet per second for rainfall events having a 99% frequency. Wood skimmers are not allowed.

Subd. 21. Habitat and Aesthetic Enhancement: The City encourages the design of stormwater management features that provide an opportunity to enhance the habitat and aesthetics of the area. This includes providing upland buffers around ponds, seeding the area with native vegetation, and designing the slopes equal to or flatter than 4:1.

Subd.22. Combination of Practices: A combination of successive practices may be used to achieve the applicable minimum control requirements specified. Justification

Section 12.12 <u>Buffer Protection for Wetlands.</u> For all development which changes land use or requires platting, a minimum 10- foot buffer of native vegetation is required around wetlands. Public trails and management of noxious weeds are allowed within the buffer. Planting of non-native species is not allowed within the buffer.

Section 12.13 <u>Stormwater and Urban Runoff Pollution Control.</u>

Subd. 1. Illegal Disposal

A. No person shall throw, deposit, place, leave, maintain, or keep or permit to be thrown, placed, left, maintained or kept, any refuse, rubbish, garbage, or any other discarded or abandoned objects, articles, or accumulations, in or upon any street, alley, sidewalk, storm drain, inlet, catch basin conduit or drainage structure, business place, or upon any public or private plot of land in Alexandria, so that the same might be or become a pollutant, except in containers, recycling bags, or other lawfully established waste disposal facility.

B. No person shall intentionally dispose of grass, leaves, dirt, or other landscape debris into a water resource buffer,

street, road, alley, catch basin, culvert, curb, gutter, inlet, ditch, natural watercourse, flood control channel, canal, storm drain or any fabricated natural conveyance.

Subd. 2. Illicit Discharges and Connection.

A. No person shall throw, drain, or otherwise discharge, cause, or allow others under its control to throw, drain, or otherwise discharge any pollutants or waters containing pollutants, other than stormwater to the municipal storm water system. The following discharges are exempt from discharge prohibitions established by this ordinance:
   1. Water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water;
   2. Discharges or flow from firefighting, and other discharges authorized by the City in writing that are necessary to protect public health and safety;
   3. Discharges associated with dye testing, however this activity requires verbal notification to the City prior to the time of the test;
   4. The prohibition shall not apply to any non-stormwater 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, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and further provided that written approval has been granted for any discharges to the storm drain system.

B. No person shall use any illicit connection to intentionally convey non-storm water to the municipal storm water system.
   1. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under the law or practices applicable or prevailing at the time of the connection.
   2. A person is considered to be in violation of this chapter if the person connects a line conveying sewage to the storm drain system, or allows such connection to continue.

C. The City shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance.

1. The owner or party responsible shall allow the City ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law. Any temporary or permanent obstruction to safe and easy access to the area to be inspected or sampled shall be promptly removed by the discharger at the request of the City and shall not be replaced.
2. If the enforcement officer has been refused access to any part of the premises from which the nuisance is occurring, and the enforcement officer is able to demonstrate probable cause to believe that there may be a violation of this section, or that there is a need to inspect, test, examine or sample as part of a routine program designed to verify compliance with this section or any order issued hereunder, or to protect the overall public health, safety and welfare of the community, then the City may seek issuance of an administrative search warrant from any court of competent jurisdiction.
3. The City may require the discharger to install monitoring equipment or other such devices as are necessary in the opinion of the City to conduct monitoring or sampling of the premises stormwater discharge. The monitoring equipment must be maintained by the discharger in a safe and proper operating condition at all times. All devices used to measure stormwater flow and quality must be calibrated to ensure their accuracy.

D. Upon finding that a person has violated a prohibition of this section, the City may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:
    1. The performance of monitoring, analysis, and reporting;
    2. The elimination of illicit connections or illicit discharges;
    3. The violating discharges, practices, or operations must cease and desist;
    4. The abatement or remediation of stormwater pollution or contamination of hazards and the restoration of any affected premises;
    5. Payment of a fine to cover administrative and remediation costs; and
    6. The implementation of source control or treatment BMPs.

Subd. 3. Good Housekeeping Provisions. Any owner or occupant of property within Alexandria shall comply with the following good housekeeping requirements:

A. No person shall leave, deposit, discharge, dump, or otherwise expose any chemical or septic waste in an area where discharge to streets or storm drain system may occur. This section shall apply to both actual and potential discharges.

B. For pools, water should be allowed to sit seven days to allow for chlorine to evaporate before discharge. If fungicides have been used, water must be tested and approved for discharge to the wastewater treatment plant.

C. Runoff of water from residential property shall be minimized to the maximum extent practicable. Runoff of water from the washing down of paved areas in commercial or industrial property is prohibited unless necessary for health or safety purposes and not in violation of any other provisions in City codes.

D. Every person owning or occupying premises through which a watercourse passes, shall keep and maintain that part of the watercourse within the premises free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or occupant shall maintain existing privately owned structures within or adjacent to a watercourse so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Subd. 4. Storage of Materials, Machinery, and Equipment. Objects, such as motor vehicle parts, containing grease, oil or other hazardous substances, and unsealed receptacles containing hazardous materials, shall not be stored in areas susceptible to runoff. Any machinery or equipment that is to be repaired or maintained in areas susceptible to runoff shall be placed in a confined area to contain leaks, spills, or discharges.

Subd. 5. Removal of Debris and Residue. Debris and residue shall be removed and disposed of properly, as noted below:

A. All motor vehicle parking lots shall be swept, at a minimum of twice a year to remove debris. Such debris shall be collected and disposed of properly. However, parking lots are not required to be swept for one month following a day on which precipitation of one-half inch or more occurs.

B. Fuel and chemical residue or other types of potentially harmful material, such as animal waste, garbage or batteries, which is located in an area susceptible to runoff, shall be removed as soon as possible and disposed of properly.

Household hazardous waste may be disposed of through community collection program or at any other appropriate disposal site and shall not be place in a trash container.

Subd. 6. Notification of Spills.

A. Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into stormwater, the storm drain system, or waters of the state, said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials, said person must immediately notify emergency response agencies of the occurrence via emergency dispatch services (911). In the event of a release of nonhazardous materials, said person shall notify the City no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the City within three business days of the personal or phone notice. If the discharge of prohibited materials originates from an industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records must be retained for at least three years.

Section 12.14 Severability. The provisions of this Ordinance are severable, and if any provisions of this Ordinance, or application of any provision of this Ordinance to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Ordinance must not be affected thereby.

Section 12.15 Abrogation and Greater Restrictions. It is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this Ordinance imposes greater restrictions, the provisions of this Ordinance shall prevail. All other Ordinances inconsistent with this Ordinance are hereby repealed to the extent of the inconsistency only.

Section 12.16 Enforcement. The City shall be responsible for enforcing this Ordinance.

Section 12.17 Penalties.

A. Any person found to be violating any provision of this ordinance shall be served by the City with written notice

stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations.

B. In the event that the owner fails to correct the situation within the given time period, the City may correct it and collect all such costs together with reasonable attorney fees, or in the alternative, by certifying said costs of correction as any other special assessment upon the land from which said correction of said violation was made.

C. Any person, firm, or corporation failing to comply with or violating any of these regulations, shall be deemed guilty of a misdemeanor and be subject to a fine or imprisonment or both. All land use and building permits must be suspended until the applicant has corrected the violation. Each day that separate violation exists shall constitute a separate offense.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ALEXANDRIA, MINNESOTA HEREBY ORDAINS:

Section I: That Chapter 12 (Storm Water Management Ordinance) be replaced with the new Storm Water Management Ordinance as outlined above, in the Alexandria City Code.

Section II: This Ordinance shall be in full force and effect from and after its passage and publication.

YES: BATESOLE, KUHLMAN, OSTERBERG, JENSEN

NO: NONE

ABSENT: BENSON

/S/ Todd Jensen, President Pro Tempore

ATTEST:

/S/ Martin D. Schultz, City Administrator

ORDINANCE NO. 622
2ND SERIES

AN ORDINANCE AMENDING CITY CODE CHAPTER 10, RELATING TO EROSION AND SEDIMENT CONTROL

WHEREAS, the intent of Chapter 10 of the Alexandria City Ordinance is to protect the public health, safety and general welfare of the community and its people through the establishment of minimum regulations governing development and use; and

WHEREAS, the City of Alexandria recognizes its obligation to protect water quality by controlling the disturbance of soil; and

WHEREAS, as an effort to reduce sedimentation of the public waters and to protect and enhance the water resources and wetlands the City of Alexandria has established feasible and reasonable standards to achieve a level of erosion and sediment control that will minimize damage to property and degradation of water resources and wetlands, and will promote and maintain the health and safety of the citizens of the City of Alexandria.

NOW, THEREFORE, The City Council of the City of Alexandria does hereby **ORDAIN**:

SECTION I: That City Code Section 10.32, is hereby amended by adding the following:

Section 10.32. Erosion and Sediment Control

Subd. 1. Purpose. The purpose of this section is to control or eliminate soil erosion and sedimentation within the City. This article establishes standards and specifications for conservation practices and planning activities that minimize soil erosion and sedimentation.

Subd. 2. Scope and Application. Except as exempted by the definition of the term "land disturbance activity" in Subdivision 3, any person, state agency, or political subdivision thereof proposing land disturbance activity within the city shall apply to the city for the approval of the erosion and sediment control plan. No land shall be disturbed until the plan is approved by the city and conforms to the standards set forth in this article.

In their interpretation and application, the provisions of this article shall be held to be the minimum requirements for the promotion of the public health, safety and general welfare. Where the requirements imposed by any provision of this article are either more restrictive or less restrictive than comparable conditions imposed by any other city ordinance, law, code, statute, or regulation, the regulations that are more restrictive or impose higher standards or requirements shall prevail. Application of this article should be considered in conjunction with other controls regulating land use and waters within the city, including administration of Wetland Conservation Act regulations, administered by the city through its agent, the Douglas County Soil & Water Conservation District (SWCD).

Subd. 3. Definitions. Unless specifically defined below, words or phrases used in this Section shall be interpreted so as to give them the same meaning as they have in common usage and to give this Chapter its most reasonable application. For the purpose of this Chapter, the words "must" and "shall" are mandatory and not permissive. All distances, unless otherwise specified, shall be measured horizontally.

1. **Best Management Practices (BMPs).** Erosion and sediment control practices that are the most effective and practicable means of controlling, preventing, and minimizing the degradation of surface water, including construction-phasing, minimizing the length of time soil areas are exposed, prohibitions, and other management practices published by the state.

2. **Common Plan of Development or Sale**. A contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, or on different schedules, but under one proposed plan. This item is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land disturbing activities may occur.

3. **Developer**. Any person, group, firm, corporation, sole proprietorship, partnership, state agency, or political subdivision thereof engaged in a land disturbance activity.

4. **Development**. Any land disturbance activity that changes the site's runoff characteristics in conjunction with residential, commercial, industrial or institutional construction or alteration.

5. **Erosion**. Any process that wears away the surface of the land by the action of water, wind, ice, or gravity.

6. **Erosion Control.** Refers to methods employed to prevent erosion. Examples include soil stabilization practices, horizontal slope grading, temporary or permanent cover, and construction phasing.

7. **Erosion and Sediment Practice Specifications or Practice.** The management procedures, techniques, and methods to control soil erosion and sedimentation as officially adopted by either the state, county, City or local watershed group, whichever is more stringent.

8. **Exposed Soil Areas.** All areas of the construction site where the vegetation (trees, shrubs, brush, grasses, etc.) or impervious surface has been removed, thus rendering the soil more prone to erosion. This includes topsoil stockpile areas, borrow areas and disposal areas within the construction site.

9. **Final Stabilization.** Means that all soil disturbing activities at the site have been completed, and that a uniform (evenly distributed, e.g., without large bare areas) perennial vegetative cover with a density of seventy (70) percent of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures have been employed.

10. **Land Disturbance Activity.** Any land change that may result in soil erosion from water or wind and the movement of sediments into or upon waters or lands within this government's jurisdiction, including construction, clearing & grubbing, grading, excavating, transporting and filling of land. Within the context of this rule, land disturbance activity does not mean:

a. Minor land disturbance activities such as home gardens and an individual's home landscaping, repairs, and maintenance work, unless such activity exceeds one half acre in exposed soil.

b. Additions or modifications to existing single family structures which

result in creating under one half acre of exposed soil or impervious surface and/or is part of a larger common development plan.

c. Construction, installation, and maintenance of fences, signs, posts, poles, and electric, telephone, cable television, utility lines or individual service connections to these utilities, which result in creating under one half acre of exposed soil or impervious surface.

d. Tilling, planting, or harvesting of agricultural, horticultural, or silvicultural (forestry) crops.

e. Emergency work to protect life, or property and emergency repairs, unless the land disturbing activity would have otherwise required an approved erosion and sediment control plan, except for the emergency. If such a plan would have been required, then the disturbed land area shall be shaped and stabilized in accordance with the City's requirements as soon as possible.

11. **Permanent Cover**. Means "final stabilization." Examples include grass, gravel, asphalt, and concrete. See also the definition of "final stabilization."

12. **Phased Project or Development.** Clearing a parcel of land in distinct phases, with at least fifty percent (50%) of the project's preceding phase meeting the definition of "final stabilization" and the remainder proceeding toward completion, before beginning the next phase of clearing.

13. **Sediment**. The product of an erosion process; solid material both mineral and organic, that is in suspension, is being transported, or has been moved by water, wind, or ice, and has come to rest on the earth's surface either above or below water level.

14. **Sedimentation.** The process or action of depositing sediment.

15. **Sediment Control.** The methods employed to prevent sediment from leaving the development site. Examples of sediment control practices are silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, and temporary or permanent sedimentation basins.

16. **Soil.** The unconsolidated mineral and organic material on the immediate surface of the earth. For the purposes of this document temporary stockpiles of clean sand, gravel, aggregate, concrete or bituminous materials (which have less stringent protection) are not considered "soil" stockpiles.

17. **Stabilized.** The exposed ground surface after it has been covered by sod, erosion control blanket, riprap, pavement or other material that prevents erosion. Simply sowing grass seed is not considered stabilization.

18. **Steep Slope.** Any slope steeper than twelve (12) percent (Twelve (12) feet of rise for every one hundred (100) feet horizontal run).

19. **Temporary Protection.** Short-term methods employed to prevent erosion. Examples of such protection are straw, mulch, erosion control blankets, wood chips, and erosion netting.

Subd. 4. Erosion and Sediment Control Plan.

1. Required. Every applicant for a building permit, subdivision approval, or a grading permit consisting of more than one-half acre of land disturbing activities within the city shall submit an erosion and sediment control plan to the City Engineer. No land shall be disturbed until the plan is approved by the City Engineer and conforms to the standards set forth herein.

All plans shall be consistent with National Pollution Discharge Elimination Permit (NPDES) requirements, and the filing or approval requirements of relevant Watershed Districts, Watershed Management Organizations, Ditch Authorities, Soil and Water Conservation Districts, or other regulatory bodies.

2. General Criteria for Erosion and Sediment Control Plan. An erosion and sediment control plan shall be required for any land disturbing activity larger than one-half acre and shall meet the following criteria:

a. Stabilize all exposed soils and soil stockpiles.
b. Establish permanent vegetation.
c. Prevent sediment damage to adjacent properties and other designed areas.
d. Schedule erosion and sediment control practices.
e. Engineer the construction of steep slopes.
f. Stabilize all waterways and outlets.
g. Protect storm sewers from the entrance of sediment.
h. When working in or crossing water bodies, take precautions to contain sediment.
i. Restabilize utility construction areas as soon as possible.
j. Protect paved roads from sediment and mud brought in from access routes.
k. Dispose of temporary erosion and sediment control measures following final stabilization.
l. Maintain all temporary and permanent erosion and sediment control practices.

3. Contents of Plan. The erosion and sediment control plan shall include the following:

a. Project description: the nature and purpose of the land disturbing activity and the amount of grading involved.
b. Phasing of construction: the nature and purpose of the land disturbing activity and the amount of grading, utilities, and building construction.
c. Project Schedule: A projected timeline for completion of all site activities.
d. Existing site conditions: existing topography, vegetation, and drainage.
e. Adjacent areas, neighboring streams, lakes, residential areas, roads, etc., which might be affected by the land disturbing activity.
f. Critical erosion areas: areas on the site that have potential for serious erosion problems.
g. Erosion and sediment control measures: methods to be used to control erosion and sedimentation on the site, both during and after the construction process.
h. Permanent stabilization: how the site will be stabilized after construction is completed, including specifications.
i. Maintenance: schedule of regular inspections and repair of erosion and sediment control structures.

j. Silt Fence: provisions for the removal of all silt fence upon establishment of permanent vegetation.

4. NPDES Construction Site Permit. Any construction activity that disturbs one or more acres is required to obtain a separate NPDES Construction Site Permit. A copy of this permit and erosion and sediment control plan shall be submitted to the City Engineer.

Subd. 5. Review of Plan. The City Engineer shall complete a review of the erosion and sediment control plan within fourteen (14) calendar days of receiving the plan from the developer.

1. **Permit Required** - If the City determines that the plan meets the requirements of this ordinance, the City shall issue a permit valid for a specified period of time that authorizes the land disturbance activity contingent on the implementation and completion of the plan.

2. **Denial** - If the City determines that the plan does not meet the requirements of this ordinance, the City shall not issue a permit for the land disturbance activity. The plan must be resubmitted for approval before the land disturbance activity begins. All land use and building permits shall be suspended until the developer has an approved plan.

3. **City inspections and enforcement** - The City shall conduct inspections on a regular basis to ensure that the plan is properly installed and maintained. In all cases the inspectors will attempt to work with the builder or developer to maintain proper erosion and sediment control at all sites. . In cases where cooperation is withheld, the City shall issue construction stop work orders, until erosion and sediment control measures meet the requirements of this ordinance. An inspection must follow before work can commence. Inspections are required as follows:

a. Before any land disturbing activity begins
b. For residential construction, at the time of footing inspections
c. At the completion of the project

The City reserves the right to conduct other random inspections during the course of the project to ensure compliance with the plan.

Subd. 6. Modification of Plan. The applicant must amend the erosion and sediment control plan as necessary to include additional requirements such as additional or modified best management practices designed to correct problems identified or address situations whenever:

1. A change in design, construction, operation, maintenance, weather, or seasonal conditions that has a significant effect on the discharge of pollutants to surface waters or underground waters.

2. Inspections indicate the plan is not effective in eliminating or significantly minimizing the discharge of pollutants to surface waters or underground waters or that the discharges are causing water quality standard exceedances.

3. The plan is not achieving the general objectives of controlling pollutants or is not consistent with the terms and conditions of this permit.

Subd. 7. Development Agreement. A development agreement prepared by the City shall be required for any project that requires an erosion and sediment control plan. The agreement shall guarantee the performance of the work described and delineated on the approved

plan. In addition, the agreement will describe the City's inspection policy. Should the applicant fail to meet any of the terms of the development agreement, the City may:

1. **Withhold inspections** - Withhold the scheduling of inspections and/or the issuance of a Certificate of Occupancy.

2. **Revocation of permits** - Revoke any permit issued by the City to the applicant for the site in question or any other of the applicant's sites within the community's jurisdiction.

Subd. 8. Remedial Action. The City may take remedial action if any of the conditions listed below exist. The Development Agreement shall stipulate that the applicant shall reimburse the City for all direct cost incurred in the process of remedial work including, attorney's fees.

1. **Abandonment** - The developer ceases land disturbing activities and/or filling and abandons the work site prior to completion of the grading plan.

2. **Failure to implement plan** - The developer fails to conform to the erosion and sediment control plan as approved by the City.

Subd. 9. Emergency Action. If circumstances exist such that noncompliance with this ordinance poses an immediate danger to the public health, safety and welfare, as determined by the city, the city may take emergency preventative action. The city shall also take every reasonable action possible to contact and direct the applicant to take any necessary action.

Subd. 10. Notification of Failure of the Plan. The City shall notify the permit holder of the failure of the erosion and sediment control plan's measures.

1. **Initial contact**. The initial contact will be to the party or parties listed on the application and/or the plan as contacts. Except during an emergency action, forty-eight (48) hours after notification by the City or seventy-two (72) hours after the failure of erosion control measures, whichever is less, the City at its discretion, may begin corrective work. Such notification should be in writing, but if it is verbal, a written notification should follow as quickly as practical. If after making a good faith effort to notify the responsible party or parties, the City has been unable to establish contact, the City may proceed with corrective work. There are conditions when time is of the essence in controlling erosion. During such a condition the City may take immediate action, and then notify the applicant as soon as possible

2. **Erosion off-site**. If sediment breaches the perimeter of the site, the applicant shall immediately develop a cleanup and restoration plan, obtain the right-of entry from the adjoining property owner, and implement the cleanup and restoration plan within forty-eight (48) hours of obtaining the adjoining property owner's permission. In no case, unless written approval is received from the City, may more than seven (7) calendar days go by without corrective action being taken. If in the discretion of the City, the permit holder does not repair the damage caused by the erosion, the city may do the remedial work required. When restoration to wetlands and other resources are required, the applicant shall be required to work with the appropriate agency to ensure that the work is done properly.

3. **Erosion into streets, wetlands or water bodies**. If eroded soils (including tracked soils from construction activities) enters streets, wetlands, or other water bodies, cleanup and

repair shall be immediate. The applicant shall provide all traffic control and flagging required to protect the traveling public during the cleanup operations.

4. **Failure to do corrective work**. When an applicant fails to conform to any provision of this policy within the time stipulated, the City may take the following actions.

a. Issue a stop work order, withhold the scheduling of inspections, and/or the issuance of a Certificate of Occupancy

b. Revoke any permit issued by the City to the applicant for the site in question or any other of the applicant's sites within the City's jurisdiction.

c. Correct the deficiency or hire a contractor to correct the deficiency. The issuance of a permit constitutes a right-of-entry for the City or its contractor to enter upon the construction site for the purpose of correcting deficiencies in erosion control.

d. Require reimbursement to the City for all costs incurred in correcting stormwater pollution control deficiencies. If payment is not made within thirty (30) days after the City incurs costs, the City will halt all work on the project site and assess any reimbursement costs to the property. As a condition of the permit, the owner shall waive notice of any assessment hearing to be conducted by the City, concur that the benefit to the property exceeds the amount of the proposed assessment, and waive all rights by virtue of Minnesota Statute 429.081 to challenge the amount or validity of assessment.

Subd. 11. Enforcement. The City shall be responsible enforcing this ordinance.

1. **Penalties**. Any person, firm, or corporation failing to comply with or violating any of these regulations, shall be deemed guilty of a misdemeanor and be subject to a fine or imprisonment or both. All land use and building permits must be suspended until the applicant has corrected the violation. Each day that a separate violation exists shall constitute a separate offense.

Subd. 12. Severability. The provisions of this ordinance are severable, and if any provisions of this ordinance, or application of any provision of this ordinance to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this ordinance must not be affected thereby.

Subd. 13. Abrogation and Greater Restrictions. It is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this ordinance imposes greater restrictions, the provisions of this ordinance shall prevail. All other ordinances inconsistent with this ordinance are hereby repealed to the extent of the inconsistency only.

SECTION II: This Ordinance shall be in full force and effect from and after its passage and publication.

ADOPTED by the City Council of the City of Alexandria this 14th day of July, 2008, by the following vote:

YES: BIGGER, CARLSON, WEISEL, BENSON, FRANK

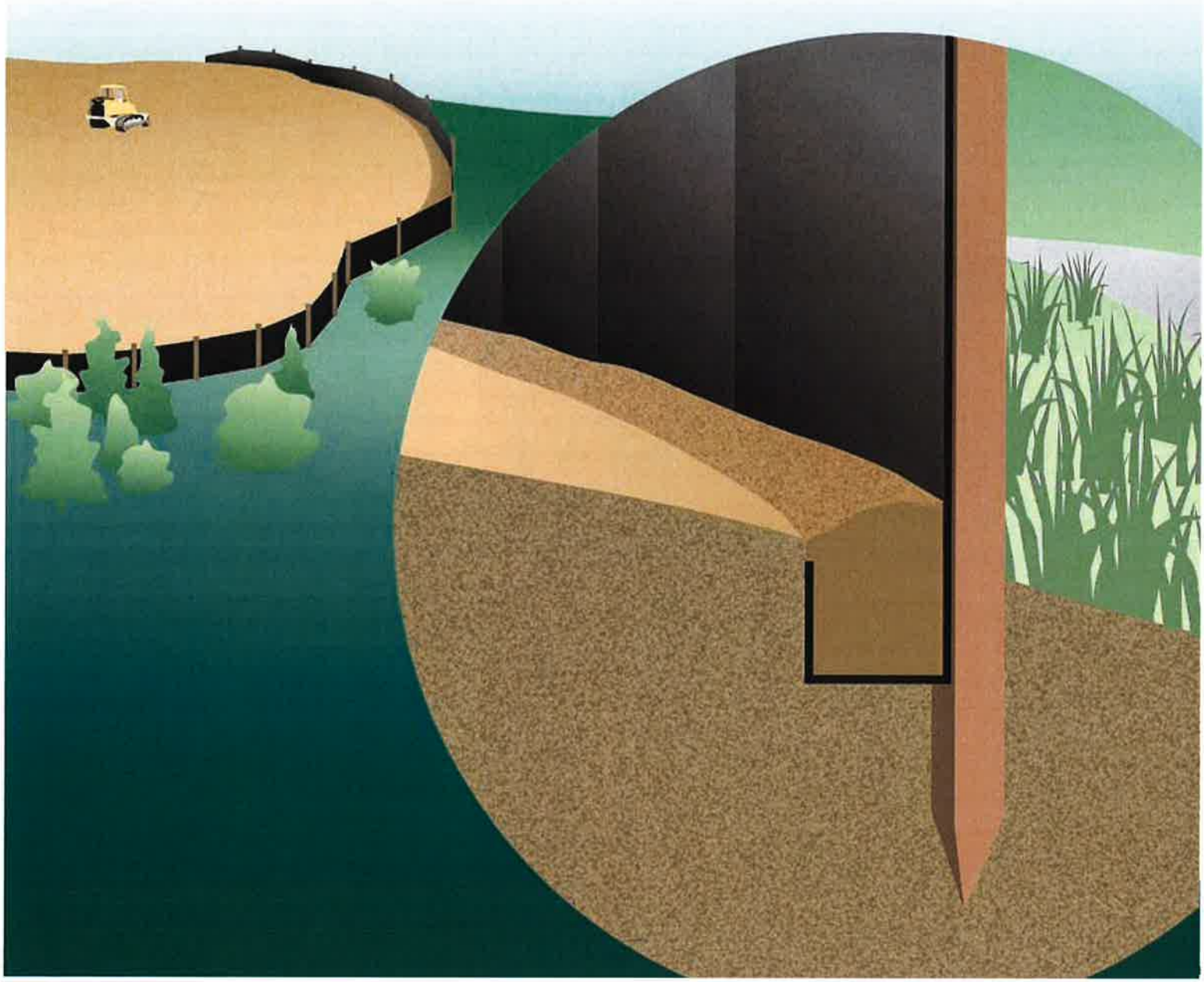
NO: NONE

ABSENT: NONE

_____
/S/ H. Dan Ness, Mayor

ATTEST: _____
/S/ James P. Taddei, City Administrator

APPENDIX E
MPCA Erosion and Sediment Control Guidance



Stormwater Construction Inspection Guide

Minnesota Pollution Control Agency

August 2008

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Acknowledgments

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Comments welcome

This is the first edition of the *Inspection Guide*. We welcome comments and suggestions on how it might be changed in future editions to better assist stormwater inspectors. Send comments to:
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Table of Contents

Chapter 1

Introduction

Purpose of this Inspection Guide

This stormwater construction inspection guide is designed to assist construction site inspectors, such as staff representing various local units of government, in the procedures for conducting a compliance inspection at construction sites. The focus of this guide is on inspecting construction sites less than five disturbed acres; however, the principles of this inspection guide can be applied to construction sites of any size.

After a brief overview of the Minnesota Pollution Control Agency (MPCA) construction stormwater permit, this inspection guide covers three main topics: How to conduct a stormwater inspection, tips on inspecting BMPs, and information about referring enforcement cases to the MPCA.

Construction Stormwater Permit Overview

The MPCA issued the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) General Stormwater Permit for Construction Activity in August 2008. Owners and operators of construction activity disturbing one acre or more of land need to obtain the construction stormwater permit. Sites disturbing less than one acre within a larger common plan of development or sale that is more than one acre also need permit coverage.

Regulated parties are required to develop a stormwater pollution prevention plan (SWPPP) and submit a completed application and a $400 application fee. Applications and other forms are available by calling 651-296-6300 and asking for "Construction Stormwater" or visiting *www.pca.state.mn.us/water/stormwater/stormwater-c.html*.

What is a "larger common plan of development or sale?"

A common plan of development or sale means a contiguous area where multiple separate and distinct construction activities are occurring under one overall plan (e.g., the operator is building on three half-acre lots in a 6-acre development). The "plan" in a common plan of development or sale is broadly defined as any announcement or documentation or physical demarcation indicating that construction activities may occur on a specific plot.

In addition to developing the SWPPP, regulated parties must implement the SWPPP, conduct regular inspections, and maintain best management practices (BMPs). Inspections are required once every seven days during active construction and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours. The next inspection must be conducted within seven (7) days after that. At the end of the project, after all disturbed surfaces are stabilized, the regulated party must submit a notice of termination/ permit modification form to let the MPCA know that the construction activity is complete.

For most sites, construction may begin seven days after the application is postmarked. For sites that are more than 50 acres and discharging to outstanding natural resource value waters or impaired waters, the SWPPP and application materials must be submitted at least 30 days prior to commencing construction.

What are "special waters?"

Additional requirements apply to construction sites that discharge within one (1) mile of a special water. These waters can include:

- Wilderness areas (such as the Boundary Waters Canoe Area Wilderness, Voyageurs National Park, and parts of Kettle River and Rum River)
- Mississippi River (portions of)
- Scenic or recreational river segments (such as the Saint Croix River and Cannon River)
- Lake Superior
- Lake Trout lakes
- Trout lakes
- Scientific and natural areas
- Trout streams

(See Appendix A, Part B of the construction stormwater permit for more information or use the Special Waters Search tool on the MPCA construction stormwater Web page)

Changes in Owner/Operator

When the owner or operator or a portion of a site or entire site changes, the former owner or operator and the new owner or operator needs to submit a Notice of Termination/Permit Modification to the MPCA. The form is available on the MPCA construction stormwater Web site and must be submitted within seven days of assuming operational control of the site, commencing work on their portion of the site, or of the legal transfer, sale or closing on the property.

For stormwater discharges from construction activities where the owner or operator changes, the new owner or operator can implement the original SWPPP created for the project or develop and implement their own SWPPP. Permittee(s) shall ensure either directly or through coordination with other permittee(s) that their SWPPP meets all terms and conditions of the permit and that their activities do not render another party's erosion prevention and sediment control BMPs ineffective.

Additional information on the MPCA's Stormwater Program is available on the Web at *www.pca.state.mn.us/water/stormwater*.

Chapter 2

How to Conduct a Stormwater Inspection

Construction Site Inspector: Role and Responsibilities

The inspector determines compliance with permit conditions, applicable regulations, and other requirements and assesses the adequacy of best management practices to protect natural resources. This is primarily accomplished by reviewing on-site activities for permit compliance and the construction operator's SWPPP.

Legal responsibilities

Part V.H of the Construction Stormwater Permit provides inspectors the authority to inspect construction sites. This section of the permit requires the construction operator to "allow representatives of the MPCA or any member, employee or agent thereof, when authorized by it, upon presentation of credentials, to enter upon any property, public or private, for the purpose of obtaining information or examination of records or conducting surveys or investigations." An inspector's first responsibility is to be familiar with the specific requirements in the general permit, and applicable regulations. Inspectors must always have and display their inspection credentials.

Professional Responsibilities

Inspectors are expected to perform their duties with a high degree of professionalism. Facts are to be noted and reported completely, accurately and objectively. Inspectors should also be tactful, courteous and diplomatic when working with construction operators and other members of the public. During an inspection, inspectors should not speak derogatorily of any product, manufacturer or person.

When problems are found that are not significant, inspectors should provide technical assistance on approaches for dealing with minor issues that do not warrant a violation notice. This could include minor issues that, if not corrected, could lead to a violation. Technical assistance refers to providing general guidance on how to solve erosion and sediment control problems without providing specific design details. In other words, the inspector does not provide engineering advice.

Inspection Procedures

An on-site construction site inspection will typically consist of the following components, followed by the development of an inspection report:

- Pre-Inspection Preparation
- Entry
- Records Review
- Site Inspection
- Exit Interview

Pre-Inspection Preparation

Plan your inspections by targeting construction sites in priority areas (i.e., sites discharging to special waters, sites near surface waters, areas undergoing rapid development), large construction sites, or sites with a history of compliance problems. Be flexible, and plan your inspections immediately prior to or during anticipated rain events, or immediately following actual rain events (this is the best time to conduct stormwater inspections!). Identify more inspection candidate sites than you can visit in a day so you have back-up sites in case changes occur.

Always keep safety in mind!

- Use safety equipment such as hard hats, reflective vests, and steel-toed shoes.
- Maintain safety equipment in good condition and proper working order.
- Watch where you are walking, and be careful of what is going on overhead.
- Never enter confined spaces, such as a ditch or manhole, unless properly trained, equipped, and certified.

In preparing for an inspection, also review available files such as permits, copies of SWPPPs or erosion and sediment control plans, past inspection reports, downstream water quality problems from monitoring/ assessment reports, and other correspondence such as maintenance records on the construction sites you will be inspecting. Copy relevant information that may be useful in the field. This could include past inspection reports in order to verify that problems have been corrected. Use the special waters search on the MPCA Web site to determine whether any of the construction sites you plan to visit are located near special waters or impaired waters. Discharges to special waters, wetlands, and impaired waters have additional requirements that are described in Appendix A of the permit.

Find all the construction sites you'll be inspecting on a map to plan out your day. Group inspections by geographic area when possible to minimize your drive time.

Finally, be prepared for the inspection. Dress for the weather and take appropriate safety gear. Make sure you have the following: inspection credentials, digital camera, copies of inspection forms, copy of the general permit, logbook for taking notes, and personal protective equipment (steel-toed shoes, hard hat, safety vest). Always take extra copies of materials such as the general permit, inspection forms, and application forms.

Entry

Before entering the construction site, observe the surroundings and various stages of construction. Note areas for in-depth review and any clear violations. This is also a good time to view construction site vehicle exit locations and perimeter controls. Indicate on the inspection form the date/time and weather conditions (e.g., light rain, sunny, some rain in previous 24 hours).

What if the site does not have a permit?

If a construction site disturbing more than one acre has not applied for the stormwater permit, notify your Regional MPCA construction contact. Explain to the site representative the requirement to apply for a stormwater permit, continue the inspection, and leave compliance assistance materials such as a copy of the permit and application. Note the violation on the inspection form.

When entering the site, review all postings and then ask for the owner or contractor whose name is on the application. If these people are not available, ask to speak with someone who is familiar with the construction site's SWPPP. Always note the names of the individuals with whom you meet. Present your credentials and explain the purpose of your inspection. Inform the individual of the typical sequence of events for the inspection (introductions, file review, site tour, exit interview, report preparation, delivery and follow-up). Ensure that the construction operator participates during the records review and accompanies you during the inspection. Ask if there are any specific safety issues or requirements for this site.

Records Review

Ask to see a copy of their SWPPP and application for coverage under the general stormwater permit, including a copy of all construction site inspections (i.e. the weekly inspections owners/operators are required to make weekly as well as within 24 hours of a rain event greater than 0.5 inches in a 24-hour period).

What to do if denied entry?

Stay calm and explain that the permit provides the MPCA and MPCA representatives with the authority to conduct inspections. Inquire as to why you are denied entry and record this information in your notes. Explain that you will need this information so that you can accurately portray their reasons for denial to your supervisor. Evaluate what they said were their reasons and determine if there are ways you can mitigate their concerns. Many times their concerns are unfounded. In no case should you threaten or indicate that their denial may lead to future punitive penalties.

Review the SWPPP to ensure it addresses all the requirements in the permit. Specific items in the SWPPP to review and record in your notes include:

- The most recent date of the SWPPP, and who prepared it.
- Primary erosion prevention and sediment control BMPs used on-site.
- Inspection and maintenance records, which are required to be kept with the SWPPP. Operator is required to inspect the site once every seven days and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.
- Permanent stormwater management practices.
- Pollution prevention practices (especially for fueling, solid waste, hazardous materials, and vehicle washing).
- Discharge points from the project to surface waters and wetlands.

Include in your notes a general narrative of the construction activity (e.g., construction of five single family homes on 2.5 acre parcel). Ask the construction operator to describe the project as you review the SWPPP. Questions you can ask include:

- How large is the project, how long has construction been underway, and when do you plan to complete construction?
- Do you store or use hazardous materials or waste fluids on-site? Do you refuel vehicles or equipment on-site?
- Does this project include concrete pouring, and how do you handle washout of concrete trucks?
- Does the project have a rain gage, and how do you track rainfall amounts?
- What procedures do you institute in advance of forecasted rain events?
- Where are the critical areas of protection?
- Where is the construction draining to?

The SWPPP must include a narrative describing the timing for installation of all erosion prevention and sediment control BMPs. The SWPPP must also address phasing.

Ask for a copy of the site map and the BMP list to determine if it is specific to the construction site you're inspecting. The site map and BMP list can be marked up during your inspection to indicate locations of potential violations and as a reminder to ensure that BMPs are implemented. Remember that these items are enforceable and that the permit requires them to fully implement their SWPPP.

Remember SWPPPs are dynamic documents; they should be updated when (Part III.A.5):

- A change in design, construction, operation, maintenance, weather or seasonal conditions have a significant effect on stormwater discharges,
- Inspections indicate the SWPPP is not effective, or
- The SWPPP is not consistent with the terms of the permit.

Discuss with the site contact whether any amendments have been made to the SWPPP. The constantly changing conditions at a construction site (from rough grading to building construction) mean that the BMPs in the SWPPP must change as the site conditions change.

If their SWPPP is not available for review, this will make your inspection more difficult. Ask for a copy of a map of the construction site, if possible, and continue with your inspection. Note the lack of an on-site SWPPP on the inspection form.

The SWPPP must be on-site!

Part III.D of the permit requires that "the SWPPP (original or copy), all changes to it, and inspections and maintenance records must be kept at the site during construction by the Permittee who has operational control of that portion of the site." The SWPPP can be kept in either the field office or in an on-site vehicle.

If the SWPPP is not available, ask why and note the response in your report. There are no legitimate excuses for not having stormwater paperwork on-site and available for review. Inform the construction operator that the permit requires the SWPPP to be on-site and available for review. If issues on-site indicate an in-depth review of the SWPPP is necessary, request that a copy of the SWPPP be submitted to the MPCA in the corrective actions.

Site Inspection

A keen eye, an understanding of the construction sequencing process and accurate documentation are the keys to an effective construction site inspection. Use the inspection form, and take notes regarding the location and condition of BMPs, discharge points, and inlets. Use photos to document concerns/violations and indicate on a rough diagram where the photos were taken. Keep a written log of preliminary findings during your inspection to facilitate your exit interview. Bring extra copies of relevant documents (such as the permit, application form, and construction stormwater permit overview fact sheet) to explain the requirements, and to leave for the construction operator if they need it.

Seasonal Considerations

During frozen ground conditions, construction activity may be suspended. BMPs must be in place; however, inspections may be suspended until runoff occurs at the site or when construction resumes. If possible, conduct inspections during the spring thaw period.

A note about construction activity:
Construction activity, by its very nature, is a "dirty" business. In many cases, land is cleared and graded to conform to the new site requirements. During a rain event, even the best-managed construction sites will look "muddy." Your role as a construction inspector is to ensure that sediment and other pollutants in stormwater leaving the site do not impact waters of the state. Become familiar with typical construction practices, terminology, and conditions and use this experience during your inspection.

A recommended construction inspection sequence follows:

1. *Plan your inspection*

   Review the site map and plan how you will conduct the inspection (this is particularly important for large construction sites). Identify the significant pollutant sources and BMPs you want to inspect (silt fence installation, sediment basins, slope stabilization, material storage areas, etc.). Consider the direction stormwater will flow as you plan the inspection. Begin your inspection at the low point on the construction site, observing all discharge points and walk up the slope to inspect the rest of the site. Consider the current sequence of construction phasing when planning your inspection.

2. *Inspect discharge points and downstream, off-site areas for signs of impact*

   When inspecting discharge points from the site, if it appears that sediment is leaving the site, walk downstream to document the extent of travel and impact on receiving waters or storm drain systems. Make sure you walk "down the street" if necessary to inspect off-site areas for signs of discharge. This is particularly important in areas with existing curbs and gutters. Inspect down-slope municipal catch basin inlets to ensure that they are adequately protected. Note on the inspection form all environmental impacts and document with photographs when possible.

In some limited situations, it may be useful to collect samples of stormwater discharges from construction sites. Contact your MPCA Regional construction stormwater staff contact if you feel sampling may be useful in a specific situation.

3. *Inspect perimeter controls*

   Note the type of perimeter controls installed at the site, and whether these have been properly installed and maintained. Inspect the construction exit to determine if there is excessive tracking of sediment from the site. Is street sweeping being used? If so, what is the frequency? Is there evidence of additional construction exits being used that are not in the SWPPP or are not stabilized?

   Check all sediment controls. All storm drains must be protected, temporary stockpiles must have sediment controls and cannot be placed in surface water, including stormwater conveyances.

4. *Compare BMPs in the SWPPP with construction site conditions*

   Are all BMPs required by the SWPPP in place? Are additional BMPs needed? Evaluate whether BMPs have been adequately installed and maintained (see Chapter 3 for more information on inspecting BMPs). Describe in your notes the potential violations and their location. Look for areas where BMPs are needed, but are missing and are not included in the SWPPP.

5. *Inspect disturbed areas not currently being worked*

   Disturbed areas need to have temporary or permanent cover when they are not being actively worked. All exposed soil areas must be stabilized no later, than 14 days, after the construction activity in that portion of the site has temporarily or permanently ceased. Note in the inspection report any unseeded and/or unmulched bare soils that have been dormant for two weeks or more.

6. *Inspect areas with final stabilization*

   Inspect any stabilized areas to ensure that excessive erosion is not occurring. Estimate whether the site has been stabilized with uniform perennial vegetative cover with a density of 70 percent over the entire pervious area. Temporary BMPs in areas with final stabilization must be removed and sediment must be cleaned out of all conveyances and temporary sediment basins that will be used as permanent water quality management basins. Areas where temporary BMPs have been removed must be stabilized and seeded.

7. *Inspect wetted perimeter areas*

   The normal wetted perimeters of any temporary or permanent drainage ditch that drains water from a construction site, or diverts water around a site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge to any surface water. Stabilization must be completed within 24 hours of connecting to a surface water. The remainder of the ditch must be stabilized within 14 days.

Guidance on inspecting individual BMPs is discussed in Chapter 3.

Common compliance problems at construction sites

The following compliance problems are commonly found at small construction sites. Keep these common problems in mind as you conduct inspections.

Problem #1 – No temporary or permanent cover

All exposed soil areas must be stabilized no later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Ask the contractor when particular exposed soils were last worked to help you determine if there is compliance.

Problem #2 – No sediment controls on site

The permit requires established sediment control practices (e.g., sediment traps/ basins, down-gradient silt fences or sediment barriers, check dams, etc.) on down-gradient perimeters before up-gradient land disturbing activities begin.

Problem #3 – No sediment control for temporary stock piles

Temporary stockpiles must have silt fence or other effective sediment controls, and cannot be placed in surface waters (or curb and gutter systems).

Problem #4 – No inlet protection

All storm drain inlets that receive a discharge from the construction site must be protected before construction begins, and must be maintained until the site is stabilized. Inlet protection may be removed for a particular inlet if a specific safety concern has been identified. Written correspondence must be documented in the SWPPP or available within 72 hours upon request.

Problem #5 – No BMPs to minimize vehicle tracking on to the road

Vehicle exits must use BMPs such as stone pads, concrete or steel wash racks, or equivalent systems to prevent vehicle tracking of sediment.

Problem #6 – Sediment on the road

If BMPs are not adequately keeping sediment off the street, then the permit requires tracked sediment to be removed (e.g., street sweeping).

Problem #7 – Improper solid waste or hazardous materials management

Solid waste must be disposed of properly, and hazardous materials (including oil, gasoline, and paint) must be properly stored (which includes secondary containment).

Problem #8 – Dewatering at the construction site

Typically dewatering occurs where building footings are being constructed. Have measures been taken to ensure that the pumped discharge is not causing erosion? Is the discharge turbid and if so is it treated before discharging from the site? Has ditching been used to dewater and if so is that water resulting in the discharge of sediment and causing water quality impairments?

Problem #9 – Concrete washout

All liquid and solid wastes generated by concrete washout operations must be contained in a leak-proof containment facility or impermeable liner.

Taking photographs

A digital camera is extremely useful during an inspection. Take digital photographs to document your findings and provide a site overview as you write your report. Take photos of the site entry sign, all potential violations, and a general view(s) of the construction site. Be certain to photograph impacts to waters of the state and try to document with photos that the construction project is the only source of the impact (not other upstream sources), so take shots above and below the project at the impacted waterbody. Remember that you do not need to incorporate all of the photos you take into your inspection report. Photograph model BMPs that could be useful as examples to other construction operators.

On the site map, indicate approximate locations of where you took photos, and the direction of the photograph. Keep notes for each photograph you take, as you need to describe the potential violation in your report.

When taking a photograph, make sure you keep perspective in mind. If the viewer will have difficulty understanding how large something is (for example, a rill/gully), then use a prop such as a person, hardhat or other object for perspective.

Exit Interview

Prior to conducting your exit interview, break away from the assembled group to gather your thoughts and prepare a list of preliminary findings. Review the inspection forms and determine the severity of any identified deficiencies. It is best to lead off your exit interview with one or more positive comments regarding the site and then list your negative findings in order of severity. Therefore, come up with a few positives examples of what they are doing right.

Debrief the person in charge. Explain that the results of the inspection are preliminary and are not final until all documents and photos have been reviewed and a supervisor has reviewed your report. Explain the identified deficiencies and any areas of concern (parts of SWPPP are missing, inspections are not being done, silt fence was down, etc.). Where possible, cite the section of the permit that requires these missing practices. While it is important that you provide a comprehensive site assessment, it is acceptable to indicate that you are uncertain about certain deficiencies/points and that additional review is required.

Leave copies of any compliance assistance information, such as the MPCA fact sheets "Overview of Minnesota's NPDES/SDS Construction Stormwater Permit" or "Sediment and Erosion Control for New Homeowners." Share information on permit compliance, and direct them to contact the MPCA office (contact phone numbers are noted on the bottom of the inspection forms), or explain how to obtain technical guidance materials.

Lastly, don't tell the construction operator which BMP to use. Explain the problem or the permit requirement that must be met, and describe how other construction sites have addressed typical problems. Its OK to tell the construction operator about what typically works and what doesn't work in the field, but don't specify the BMP to use (especially if it is a proprietary BMP). Ultimately, it is up to the construction operator to decide which BMPs to use.

Report Writing and Follow-up

Inspection reports consist of inspection forms, a site map and a photo log. If possible, complete all the relevant fields on the inspection forms and write your inspection report while you are still on the construction site. This will allow you to double check any observations and ask follow-up questions.

Remember that your inspection report is a legal document. Write legibly, accurately and objectively. Report all violations observed at the site, and always cite the section of the permit that was violated. Be careful not to include any information that you are unsure of (i.e., product names). The inspection report may be the first step in a compliance process that could reasonably be expected to be contentious. Factual errors in the report will bring the entire report and inspection into question, and will hurt the inspector's credibility. Therefore, if there is any doubt about the information, it should be left out.

When writing the description of violations, items that were stated to occur but were not observed should always be attributed to the construction operator or their representative. For example, the representative may state that the street is swept daily, but you do not know this as an observed fact.

Be consistent when writing your inspection reports. Identify potential violations in such a way that another inspector can take your report and locate the problem area easily. Be specific when you describe your observations. Don't write "a discharge was entering the storm drain" but rather "a discharge was entering the storm drain on the east side of the project below the construction entrance." As a rule, descriptions of potential violations should be in past tense, i.e., "the silt fence was installed without being toed in."

The photo log provides an important visual link between the written inspection report and the actual inspection. The photo log will also help determine the severity of potential violations. The inspection checklist should reference the photo log.

Photo log should include:

1. Size the photos so that the shortest side is 3.5 inches. Center the photos and captions on the page. Generally, a page will have two landscape oriented photos or one portrait. See Attachment A, page 28, for a sample photo log.
2. Include a photo(s) that illustrates general construction site conditions. A macro level shot provides insight into whether the site is generally in good shape or poorly maintained. For a site that is generally in compliance, the general construction site conditions photo may be the only picture in the log.
3. Provide photos for all potential violations. The photo serves as a record that the findings actually occurred and provides a means of comparing future site conditions with those on the day of inspection. Also, it's easier to resolve potential disputes with the construction operator if findings are documented with photographs.
4. Photo captions should briefly describe what is observed in the picture. Avoid references to the "normal" conditions in that area ("per the construction operator" statements); these are better discussed in the inspection report.

5. Check to make sure the construction site name and NPDES/SDS permit number match the inspection report. The best way to do this is to create a new photo log for each construction site; problems seem to arise when inspectors recycle photo logs by erasing the photos from one site and add those from another.

Save the photo log as the nine digit NPDES/SDS permit number followed by the facility name, or first word of a long facility name (i.e., C00012345 Acme.doc). The NPDES/SDS permit number is the unique value used to organize the photo logs with the reports and make sure that none are missing.

Chapter 3

Tips on Inspecting BMPs

Inspecting BMPs

The following BMPs are commonly implemented on small construction sites. Tips for inspecting these BMPs are described on the following pages. For more information on BMPs, see:

- Protecting Water Quality in Urban Areas: Best Management Practices for Dealing with Stormwater Runoff from Urban, Suburban and Developing Areas of Minnesota, Minnesota Pollution Control Agency, March 2000. *www.pca.state.mn.us/water/pubs/sw-bmpmanual.html.*
- Minnesota Urban Small Sites BMP Manual: Stormwater Best Management Practices for Cold Climates, Metropolitan Council, 2001. *www.metrocouncil.org/environment/Watershed/bmp/manual.htm*

Both manuals provide details on the standards and specifications for installing and maintaining these and other stormwater BMPs.

The BMPs are generally organized by the order an inspector will typically encounter them in the field when conducting an inspection.

The BMPs in this list were selected because they are commonly found on construction sites disturbing less than five acres of soil.

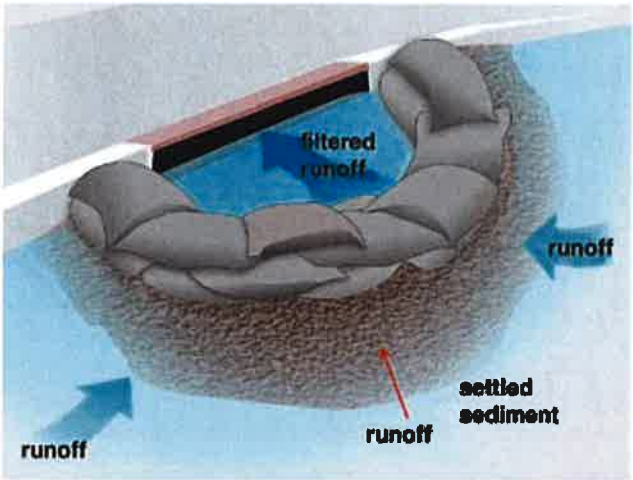

Figure 1. *Sand or gravel bags can be used to filter stormwater runoff before entering a catch basin. Commercial products are also available that fit in front of or inside the catch basin.*

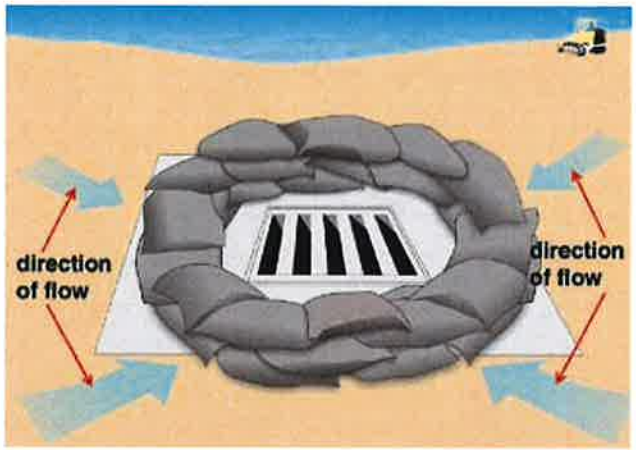

Figure 2. *Sand or gravel bags used to protect a drop inlet.*

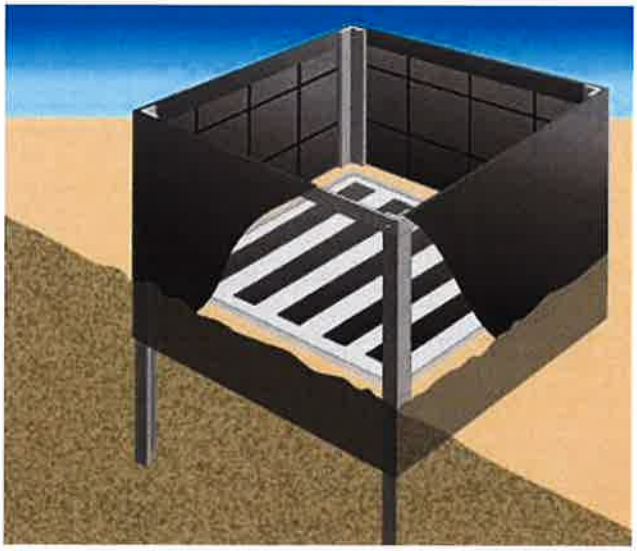

Figure 3. *Silt fence can also be used to protect a drop inlet.*

Storm drain inlet protection

Storm drain inlet protection prevents sediment from entering a storm drain by surrounding or covering the inlet with a filtering material. This allows sediment-laden runoff to pond and settle before entering the storm drain.

Several types of filters are commonly used for inlet protection: silt fence, sand bags or block and gravel. The type of filter used will depend on inlet type (curb inlet, drop inlet), slope, and amount of flow. Many different commercial inlet filters are also available. Some commercial inlet filters are placed in front of or on top of an inlet, others are placed inside the inlet and under the grate.

Permit requirements:

- All storm drain inlets must be protected by appropriate BMPs during construction until all sources with potential for discharging to the inlet have been stabilized. Inlet protection may be removed if a specific safety concern has been identified and the Permitee(s) have received written correspondence from the jurisdictional authority (Part IV.C.4).
- All sediment control BMPs must be inspected to ensure integrity and effectiveness. All nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs. (Part IV.E.4).

Inspection tips:

- ✓ Inlet protection is a secondary BMP. Make sure that erosion controls or additional sediment controls are also in place.
- ✓ The inlet protection must not block the storm drain or cause flooding.
- ✓ Inlet protection must be in place immediately after storm drains are installed (or before land disturbance activities begin in an area with existing storm drains).
- ✓ Sediment accumulation must be removed after each storm event if it impedes flow through the filter.
- ✓ Make sure there are not any "gaps" allowing unfiltered stormwater to enter the inlet.

Stabilized construction exit

A rock construction exit can reduce the amount of sediment transported onto paved roads by vehicles. The construction exit does this by knocking mud off the vehicle tires before the vehicle enters a public road.

Permit requirements:

- Vehicle tracking of sediment from the construction site must be minimized by BMPs such as stone pads, concrete or steel wash racks, or equivalent systems. Street sweeping must be used if such BMPs are not adequate to prevent sediment from being tracked onto the street (Part IV.C.6).
- Construction site vehicle exit locations must be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment must be removed from all off-site paved surfaces within 24 hours of discovery, or if applicable, within a shorter time (Part IV.E.4.d).

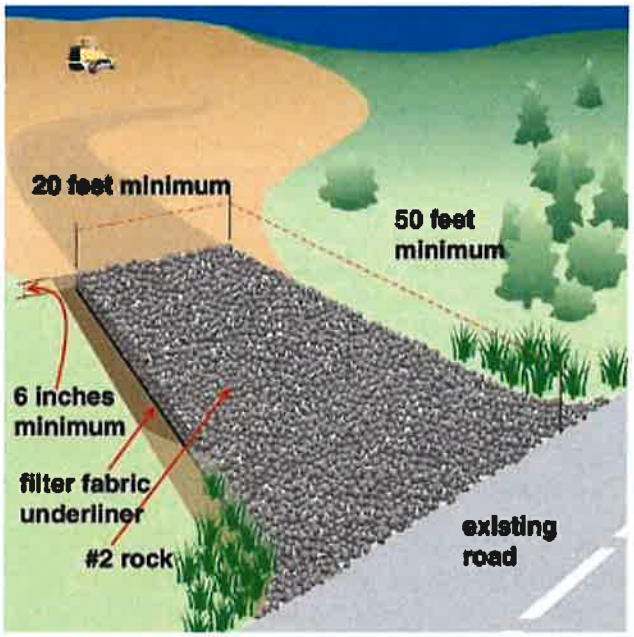

Figure 4. *Stabilized construction exit.*

Inspection tips:

- ✓ Is there evidence of sediment tracking from the site? (Street sweeping may be necessary if sediment tracking is evident).
- ✓ Is there evidence that vehicles are leaving the site from other locations, and not using the designated construction exits?
- ✓ Does the aggregate need to be replaced or replenished?
- ✓ Is the construction exit long enough to remove mud from the tires (50 ft. minimum)?
- ✓ Is the site graded away from the construction exit to prevent runoff from leaving the site?

Silt fence/other sediment barrier

A silt fence or sediment filter (such as a fiber roll or wattle) is a down-gradient barrier intended to intercept sheet flow runoff and settle out sediment upslope while allowing runoff to filter through.

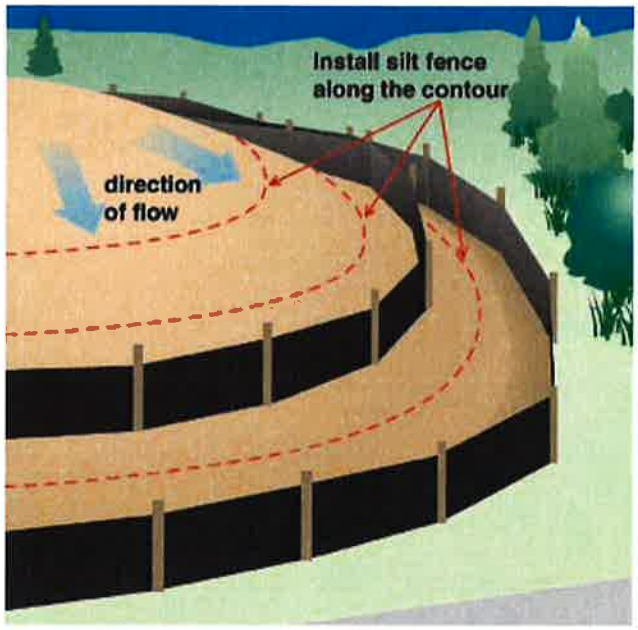

Figure 5. *Illustration of silt fence installed along the contour.*

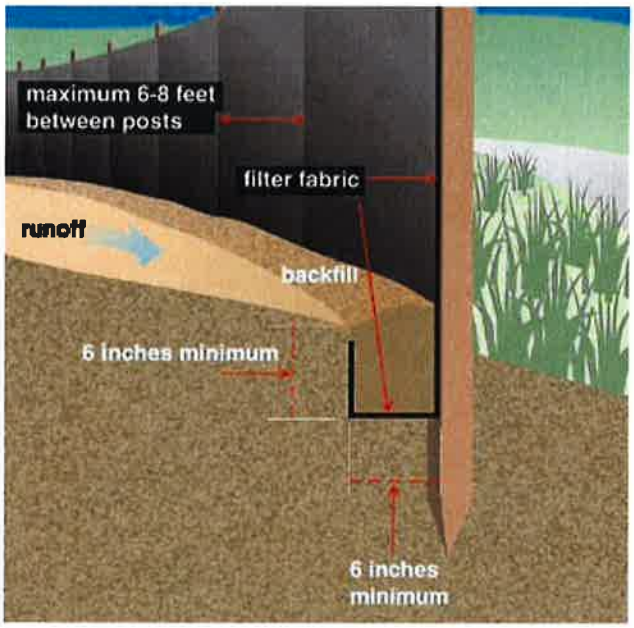

Figure 6. *Detail of silt fence installation.*

Figure 7. *Illustration of "J-hooks" used during silt fence installation.*

Permit requirements:

Sediment control practices must be established on all down-gradient perimeters before any upgradient land disturbing activities begin. These practices must remain in place until final stabilization has been established (Part IV.C.2). All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/3 of the height of the fence. These repairs must be made within 24 hours of discovery, or as soon as field conditions allow access (Part IV.E.4.a).

Inspection tips:

- ✓ Is the silt fence installed along the contour (on a level horizontal plane)?
- ✓ Are the ends turned up (J-hooks) to help pond the water behind the filter?
- ✓ Is the filter trenched-in with the stakes on the downhill side (trench must be 6 inches deep by 6 inches wide)?

- ✓ Has sediment been removed when it reaches 1/3 the height of the barrier?
- ✓ Sediment barriers should not be used as check dams or where concentrated flow is expected.

Key inspection area: Inadequate installation

- Soil should be compacted after trenching.
- The stakes used to hold the silt fence must be on the down-slope side.

Key inspection area: Improper placement

- A silt fence is not adequate protection for steep, long slopes. The drainage area must be no greater than ¼ acre per 100 feet of fence; i.e., silt fences must be spaced 60-110 ft. apart on long slopes.

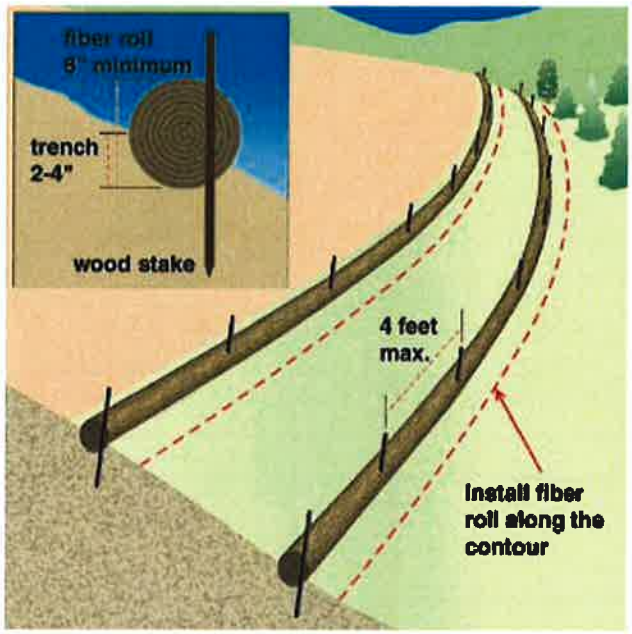

Figure 8. *Fiber roll installation and detail.*

Key inspection area: Maintenance

- Torn or degraded silt fence fabric must be replaced immediately.

Diversion ditches/berms

Diversion ditches or berms direct off-site runoff away from unprotected slopes or direct sediment-laden runoff to a sediment trapping structure. A diversion ditch can be located at the upslope side of a construction site to prevent surface runoff from entering the disturbed area. Ditches or berms on steeper slopes may need to consider erosive velocities. Also, ensure that the diverted water is released through a stable outlet and does not cause downstream flooding.

Inspection tips:

- ✓ Check to make sure the diversion discharges to a stable outlet or channel.
- ✓ Check to see if diversion ditches and berms have been seeded.
- ✓ Is the diversion eroding? (channel grades should be relatively flat).
- ✓ Check dams may be necessary if high velocity flows are present.

Figure 9. *Diversions should be used to divert stormwater away from disturbed areas.*

Mats, mulches, and blankets

Mats, mulches and blankets are used for temporary stabilization and establishing vegetation of disturbed soils. Mats and blankets are typically used on slopes or channels while mulches are effective in helping to protect the soil surface and foster the growth of vegetation.

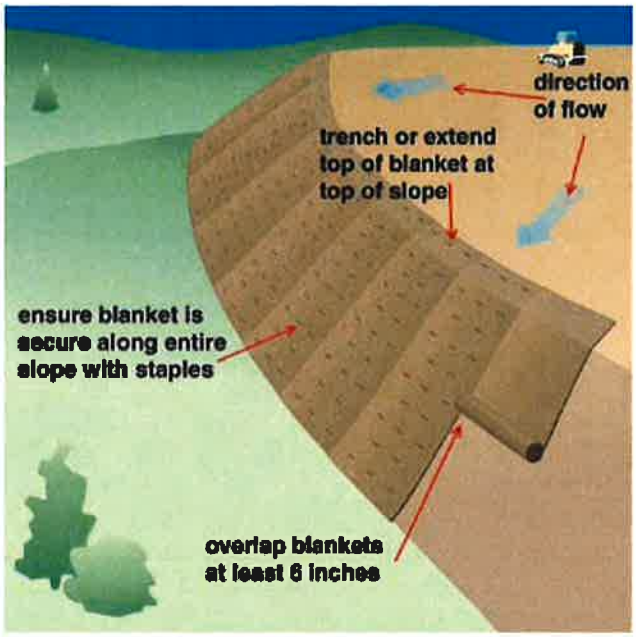

Figure 10. *Erosion control blanket.*

Inspection tips:

- ✓ The blanket or mat must come into complete contact with the soil.
- ✓ Check that the top of the blanket is trenched-in (there should be no evidence of water flowing under the blanket or mat).
- ✓ Mulch should not be placed in concentrated flow areas.
- ✓ Check to see if erosion is occurring in the mulched area (more mulch may need to be applied).
- ✓ Check blankets and mats to see if sections are overlapped 4-6 inches and staples are 12 inches apart on tops and 24 inches apart down the sides and in the middle.

Temporary sediment trap or pond

A temporary sediment trap or pond is a small, temporary ponding area formed by constructing an earthen embankment with an outlet across a swale. Temporary sediment traps are intended to detain sediment-laden runoff from small, disturbed areas long enough to allow the majority (at least 75 percent) of the sediment to settle out.

Sediment traps are designed for small areas. The volume of the trap must be at least 1,800 cubic feet per acre of contributing drainage.

Inspection tips:

- ✓ Check the location of the sediment trap. Failure of the trap should not pose a risk to life or property.
- ✓ Sediment in the trap should be removed after it reaches about 1/3 the design volume.
- ✓ The trap should not be installed in a main stream or near culvert outlets.
- ✓ Check the outlet for needed maintenance.

Vegetative stabilization

Vegetative stabilization includes temporary or permanent seeding and sodding. Vegetative stabilization helps prevent erosion at construction sites by reestablishing vegetation on exposed soils. Native and noninvasive species are highly preferred to introduced grasses.

Permit requirement (Part IV.B.2):
All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 14 days, after the construction activity in that portion of the site has temporarily or permanently ceased. Temporary stock piles without significant silt, clay or organic components and the constructed based components of the roads, paving lots and similar surfaces are exempt from this requirement.

Inspection tips:

- ✓ Are all exposed soil areas stabilized?
- ✓ Check for signs of erosion in vegetated areas.
- ✓ Concentrated flows should not be allowed across newly seeded slopes.
- ✓ If late in the year, a slope may need to be mulched rather than seeded.

Permanent stormwater management system

For projects that replace pervious surfaces with one or more acres of cumulative impervious surface, a permanent stormwater management system that treats ½ inch of runoff from the new impervious surface is required (one (1) inch of runoff must be treated when discharging to special waters). See Part III.C of the permit for additional information.

For those areas of the project where there is no feasible way to meet the requirements for the water quality volume, then up to three acres or one percent of project size (whichever is larger) can use other treatment such as grassed swales, smaller ponds or grit chambers.

Documentation must be provided in the SWPPP.

The construction operator can choose one of the following approaches to meet this requirement:

- *Wet sedimentation basin.* Permanent storage volume (dead storage) of 1800 cubic feet of storage per acre that drains to the basin must be provided. The water quality volume (live storage) must be discharged at no more than 5.66 cubic feet per second (CFS) per acre of surface area of the pond. The water quality volume treated should be 1/2 inch times of new impervious surface. (Part III.C.1).
- *Infiltration/filtration.* Treatment can include infiltration basins and trenches, rainwater gardens, sand filters, bioretention areas, and enhanced swales. The water quality volume treated should be 1/2 inch of new impervious surface. (Part III.C.2).

- *Regional Ponds.* Written authorization to discharge to a regional pond must be included in the SWPPP, and the pond must meet the permit's design requirements. (Part III.C.3)
- *Combination of the above practices.* SWPPP must document the volume that each practices addresses. (Part III.C.4)
- *Alternative method.* An alternative method must be approved in advance by the MPCA. Check the SWPPP to see if approval and additional documentation is provided. (Part III.C.5)

Solid waste/hazardous materials management

Part IV.F of the permit requires construction sites to implement pollution prevention measures. At a minimum, sites are required to:

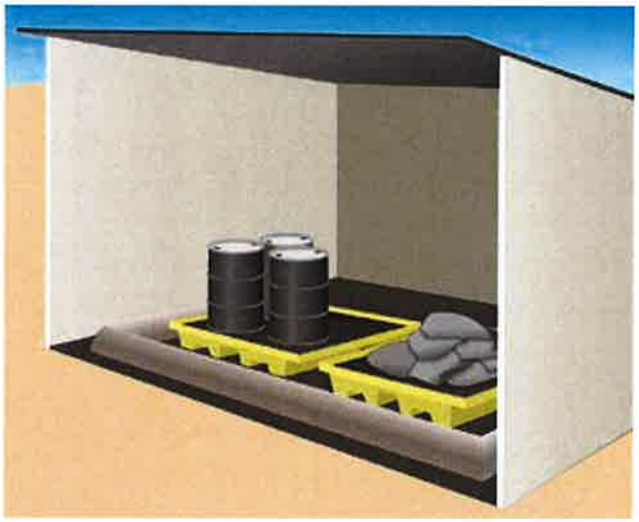

Figure 11. *Example of hazardous materials storage (doors removed for illustrative purposes only). Access to hazardous materials must be restricted.*

- Properly dispose of solid waste.
- Hazardous materials must be properly stored, including secondary containment, with restricted access to prevent vandalism. Oil, gasoline and paint are hazardous materials often used at construction sites.
- Limit external washing of vehicles and contain runoff. Engine degreasing is prohibited.

Permit requirements:

- Solid Waste: Collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other wastes must be disposed of properly and must comply with MPCA disposal requirements. (Part IV.F.1).
- Hazardous Materials: Oil, gasoline, paint and any hazardous substances must be properly stored, including secondary containment, to prevent spills, leaks or other discharge. Access to storage areas must be restricted to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with MPCA regulations. (Part IV.F.2).
- Spills must be reported to the Minnesota Duty Officer 1-800-422-0798.
- External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed on site. (Part IV.F.3).

- Concrete washout onsite: All liquid and solid wastes generated by concrete washout operations must be contained in a leak-proof containment facility or impermeable line. A compacted clay liner that does not allow washout liquids to enter ground water is considered and impermeable liner. The liquid and solid wastes must not contact the ground, and there must not be runoff from the concrete washout operations or areas. Liquid and solid wastes must be disposed of properly and in compliance with MPCA regulations. A sign must be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities. (Part IV.F.4).

Inspection tips:

- ✓ Does the construction site have dumpsters or other containers for debris and solid waste?
- ✓ Is there evidence of solid waste or debris in the storm drain system?
- ✓ Are oil, gasoline and paint properly stored?
- ✓ Does the construction operator allow vehicles to be washed on-site?
- ✓ Are solid waste and hazardous materials stored away from receiving waters and catch basins?
- ✓ Is there evidence of hazardous materials being disposed of in the solid waste bins?
- ✓ Is there evidence that the solid waste or hazardous materials containers have leaked?
- ✓ Are vehicles or equipment fueled on-site? Is this area bermed or away from receiving waters and storm drains?
- ✓ Are all hazardous materials containers properly labeled?
- ✓ Are concrete washouts properly installed away from receiving waters and storm drains?
- ✓ Is there a sign adjacent to each washout facility to inform concrete equipment operators to utilize the proper facility.

Chapter 4

Referring Enforcement Cases to the MPCA

Specific referral procedures are detailed in contracts between the MPCA and non-MPCA inspectors. In most instances, referrals will follow this general practice. Cases may be referred directly to the MPCA from approved agencies. At this point the MPCA determines if enforcement actions are warranted and if proper documentation has been filed. If the MPCA determines that no action is required, because of the lack of documentation or insufficient information or evidence, the case will be referred back with a letter of explanation. If MPCA staff determine that action is required the case will be pursued. Cases that meet MPCA requirements will be brought through the MPCA enforcement process in conjunction with the referring approved agency. Most times a parallel request will be made by the referring approved agency to engage with local enforcement measures. These measures may include: having the plan-approving agency (zoning and planning departments) refrain from issuing or, in some cases, revoking any building or grading permits until outstanding violations are remedied.

The following are three common violations at small construction sites and the potential level of enforcement response by the MPCA and approved partners. Further information and details on MPCA enforcement response or guidance on inspection reports and field letter of warning use can be obtained from the MPCA Enforcement Response Plan (ERP).

For failure to obtain an NPDES stormwater permit

Citation: 7001.1035, 7001.1040 and 7001.1030.

Suggested enforcement action: Administrative Penalty Order (APO).

Evidence needed: photos of the construction activity, DELTA permit search, a completed inspection report, pollutant discharge documentation (when occurring), size of site, cite the "failure to obtain a permit" violation,

Required action: Immediately cease construction work. Create corrective actions that will prevent harm or correct/minimize releases. Apply for permit ASAP and prior to continued site activity. Follow up with appropriate enforcement action.

For discharging sediment into waters of the state

Citation: Minnesota Statute 115.061 or Minnesota Rule 7001.0210.

Suggested enforcement action: APO/Stipulation Agreement.

Evidence needed: Delineation of sediment plume, photos, and inspection report which describes the impacts with good factual records.

Required action: Create corrective actions to stop discharge and prevent harm or correct/minimize releases, report discharges to appropriate agencies. Proceed with appropriate enforcement action; most cases involving discharges typically involve penalties depending on the seriousness, length of time and response to the discharge.

For violations of the NPDES/SDS stormwater permit requirements

Citation: NPDES/SDS permit MN R100001

Suggested enforcement action: Letter of Warning, APO or Stipulation Agreement.

Evidence needed: Review erosion and sediment control plans, photos, and inspection reports that describes any impacts with good factual records of failure of the permit conditions.

Required action: Clearly and concisely document any violations, including the location of the violation and the part of the permit that the construction operator is violating. Create corrective actions that will result in compliance with the permit and, if appropriate, establish a time frame for compliance. Write clearly and concisely. Proceed with enforcement as appropriate. Cases involving environmental harm or potential for harm may involve penalties depending on the seriousness, length of time and response to the corrective actions. Case by case evaluation is necessary to make these determinations. If a reinspection is necessary, set a time or date for this (either scheduled with the construction operator or an unannounced inspection).

Enforcement options available

There are a suite of enforcement options available to local government or state agencies ranging from field requests to formal notices and various penalty actions, including local citations, administrative penalty orders, stipulation agreements, stop work orders and permit revocations.

Chapter 5

Additional Resources

This *Stormwater Inspection Guide* is available online, as are the additional resources on stormwater BMPs listed below:

MPCA Stormwater Inspection Guide
www.pca.state.mn.us/publications/wq-strm2-10.pdf.

MPCA Stormwater Manual
www.pca.state.mn.us/water/stormwater/stormwater-manual.html. The first half of the manual is dedicated to the general Minnesota context for stormwater management. The second half includes diagrams and formulas, it is intended for professional, but useful for homeowners.

MPCA Stormwater Program
www.pca.state.mn.us/water/stormwater/index.html. Click on the construction stormwater program to get copies of the construction permit, application, fact sheets, information on special waters and staff contacts.

MPCA Stormwater BMP Manual
www.pca.state.mn.us/water/pubs/sw-bmpmanual.html. An electronic copy of the MPCA's *Protecting Water Quality in Urban Areas: Best Management Practices for Dealing with Stormwater Runoff from Urban, Suburban and Developing Areas of Minnesota* (2000). Includes information on all types of stormwater control practices.

Metropolitan Council's Urban Small Sites BMP Manual
www.metrocouncil.org/environment/Watershed/bmp/manual.htm.
An electronic copy of the *Minnesota Urban Small Sites BMP Manual: Stormwater Best Management Practices for Cold Climates* (2001). This BMP manual provides information on construction and permanent stormwater BMPs.

Minnesota Erosion Control Association
www.mnerosion.org. An organization that is advancing effective stormwater management and erosion and sediment control techniques and practices.

International Erosion Control Association
www.ieca.org Association for erosion and sediment control professionals.

Chapter 6

Definitions

The following selected definitions are reprinted from the MPCA's construction permit. For additional definitions, see the construction permit.

"Best Management Practices (BMPs)"
Erosion and sediment control and water quality management practices that are the most effective and practicable means of controlling, preventing, and minimizing degradation of surface water, including avoidance of impacts, construction-phasing, minimizing the length of time soil areas are exposed, prohibitions, and other management practices published by state or designated area-wide planning agencies. Individual BMPs found in the construction permit are described in the current version of *Protecting Water Quality in Urban Areas*, Minnesota Pollution Control Agency 2000. BMPs must be adapted to the site and can be adopted from other sources. However, they must be similar in purpose and at least as effective and stringent as the MPCA's BMPs. (Other sources include manufacturers specifications, *Stormwater Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices*, U.S. Environmental Protection Agency 1992, and Erosion Control Design Manual, Minnesota Department of Transportation, et al, 1993).

"Common Plan of Development or Sale"
A contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. One plan is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land-disturbing activities may occur.

"Construction Activity"
Construction activity as defined in 40 C.F.R. part 122.26(b)(14)(x) and small construction activity as defined in 40 C.F.R. part 122.26(b)(15). This includes a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated stormwater runoff, leading to soil erosion and movement of sediment into surface waters or drainage systems. Examples of construction activity may include clearing, grading, filling and excavating. Construction activity includes the disturbance of less than one acre of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb one (1) acre or more.

"Erosion Prevention"
Measures employed to prevent erosion including but not limited to: soil stabilization practices, limited grading, mulch, temporary or permanent cover, and construction phasing.

"Final Stabilization" requires all of Parts 1-5 or Part 6:

1. All soil disturbing activities at the site have been completed and all soils must be stabilized by a uniform perennial vegetative cover with a density of 70 percent over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions.

2. The permanent stormwater treatment system meets all requirements in Part III, C. This includes but is not limited to, a final clean out of temporary or permanent sedimentation basins that are to be used as permanent water quality management basins and final construction or maintenance of infiltration basins. All sediment must be removed from conveyance systems and ditches must be stabilized with permanent cover.

3. Prior to submission of the Notice of Termination, all temporary synthetic and structural erosion prevention and sediment control BMPs (such as silt fence) must be removed on the portions of the site for which the Permittee is responsible. Best Management Practices designed to decompose on site (such as some compost logs) may be left in place.

4. For residential construction only, individual lots are considered finally stabilized if the structure(s) are finished and temporary erosion protection and downgradient perimeter control has been completed and the residence has been sold to the homeowner. Additionally, the Permittee must distribute the MPCA's "Homeowner Fact Sheet" to the homeowner to inform the homeowner of the need for, and benefits of, permanent cover.

5. For construction projects on land used for agricultural purposes (e.g., pipelines across crop or range land) Final Stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use.

6. A Permittee may terminate permit coverage prior to completion of all construction activity if all of the following conditions are met in addition to Part 2 and 3 and where applicable, Part 4 or Part 5.

    a. Construction activity has ceased for at least 90 days.

    b. At least 90 percent (by area) of all originally proposed construction activity has been completed and permanent cover established on those areas.

    c. On areas where construction activity is not complete, permanent cover has been established.

"Operator"
The person (usually the general contractor), designated by the owner, who has day-to-day operational control and/or the ability to modify project plans and specifications related to the SWPPP. The person must be knowledgeable in those areas of the permit for which the operator is responsible. (Part II.B. and Part IV.).

"Owner"
The person or party possessing the title of the land on which the construction activities will occur; or if the construction activity is for a lease, easement, or mineral rights license holder, the party or individual identified as the lease, easement or mineral rights license holder; or the contracting government agency responsible for the construction activity.

"Permittee"
A person(s), firm, or governmental agency or other institution that signs the application and is responsible for compliance with the terms and conditions of the permit.

"Sediment Control"
Methods employed to prevent sediment from leaving the site. Sediment control practices include silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection, and temporary or permanent sedimentation basins.

"Stormwater"
Defined under Minn. R. 7077.0105, subp. 41(b), and includes precipitation runoff, stormwater runoff, snow melt runoff, and any other surface runoff and drainage.

"Stormwater Pollution Prevention Plan"
A plan for stormwater discharge that includes erosion prevention measures, sediment controls and permanent stormwater Management System that, when implemented, will decrease soil erosion on a parcel of land and decrease off-site nonpoint pollution.

"Surface Water or Waters"
All streams, lakes, ponds, marshes, wetlands, reservoirs, springs, rivers, drainage systems, waterways, watercourses, and irrigation systems whether natural or artificial, public or private.

"Temporary Erosion Protection"
Methods employed to prevent erosion. Examples of temporary cover include; straw, wood fiber blanket, wood chips, and erosion netting.

"Waters of the State"
Defined in Minn. Stat. § 115.01, subd. 22 as all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.

Attachment A - Photo Log

Acme Construction (permit number)

Inspected by: (Inspector's name, office, phone number)

Construction site name and inspector's last name, office, and phone number are centered in the header and must appear on all pages.

Photo 1: Well-maintained and labeled concrete truck washout

Generally each page will have two landscape or one portrait picture(s). To size each picture, right-click on the picture and select Format Picture for sizing. For landscape view, set height to 3.5" and width is set by MS Word (make sure Lock Aspect Ratio is checked ON.) For portrait view, set width to 3.5" and height is set by MS Word.

Photo 2: Hay bales and silt fence that are in need of maintenance

Inspection Date: January 5, 2004

Page 1 of 3

Inspection date and sequential page numbering in the footer must appear on all pages.

Attachment B - Violation Citations

NPDES/SDS General Stormwater Permit for Construction Activity Violation Citations

Citation	Permit section or rule
No permit	Minn. R. 70090.2010 Subparts 1, 2, 3 (permit required, permit application deadline, and compliance requirements for unpermitted construction, respectively)
Change of Coverage	II. B. 5
Erosion Control Practices during Construction	
a) All exposed soil must be stabilized no later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased	IV. B. 2
b) Normal wetted perimeter of drainage system - 200' within 24 hours of connecting	IV. B. 3
c) Energy dissipation (temp. or perm.) within 24 hours	IV. B. 4
Sediment Control Practices during Construction	
a) Lacking sediment control practices Overloaded systems eliminated, no unbroken slopes 75' @ 3:1>	IV. C. 1
b) Temporary sediment basin required	III. B
c) Inlet BMPs not functional	IV. C. 4
d) Perimeter controls/soil disturbance	IV. C. 2
Inspections and Maintenance	
a) Maintenance of erosion and sediment temporary/permanent cover	IV. E. 4
b) Temporary sediment basin 1/2-volume	IV. E. 4. b
c) Recovery of sediment in waters (name water body)	IV. E.4. c
– Duty to notify, avoid and recover water pollution	Minn. Stat.115.061§
– Nuisance conditions prohibited (define discharge)	Minn. R 7050.0210, subp. 2
d) Vehicle tracking	IV. E.4. d
Inspections and Records Retention	III. D
a) SWPPP development required	III. A
SWPPP requirements:	III. A. 4
– BMPs/locations procedures	III. A. 4. a
– Site map/flow arrows	III. A. 4. b
– Areas not to be disturbed	III. A. 4. c
– Phased areas	III. A. 4. d
– Surface waters/wetlands 1 mile	III. A. 4. e
– Methods for final stabilization	III. A. 4. f
– Amend SWPPP modify BMP	III. A. 4
b) Inspections (specifically note failed maintenance)	IV. E.
c) Training requirement documentation	III.A.2

Permanent Stormwater Treatment

>One (1) acre impervious, permanent treatment required III. C

a) Wet sedimentation basin	III. C. 1
• Regional ponds	III. C. 3
• Infiltration/filtration (hydro analysis)	III. C. 2
• Alternative methods, 90-day review, monitoring	III. C. 5
b) Pretreatment required	III. C
c) Dewatering	IV. D
d) Turbid discharges off site or waters of the state	Minn. R 7050. 0210, subp.2
e) Wetland impacts: authorization and mitigation	

Management Pollution Prevention

a) Solid waste disposed of properly	IV. F. 1
b) Hazardous materials in secondary containment and restricted access	IV. F. 2
c) Defined areas for construction vehicles external washing	IV. F. 3
d) Defined concrete washout on site and with a sign	IV. F. 4

Attachment B - Violation Citations

(continued)

Letter of Warning (LOW)

A notice to a regulated party (RP) that documents violations discovered during an inspection, complaint follow-up or review of submittals. The LOW typically includes a reference of the statute, rule, permit condition or checklist that are violated. The LOW typically requires the regulated party to complete specific corrective actions to return the facility to compliance. The LOW usually gives a regulated party between 7-30 days to complete required corrective actions.

Request for Information (RFI)

A notice to an RP requiring information. Occasionally additional information is required to determine the status of compliance or for an RP to respond to violations discovered. This information can be used to determine if elevated enforcement (including penalties) is appropriate.

Corrective Actions (LOW or RFI)

Requirements to correct field conditions and to come into compliance with the permit, statute or rules and must be responded to in the period noted on this field report. This response (including any lack of response) is considered by the MPCA and future enforcement for the violations discovered.

Attachment C - Temporary, Permanent Sediment Basin Checklis

Site Name/Location _____ Date of inspection_____

Permanent – temporary (circle) sedimentation basins: (location/ID)_____

Required basin installed (> 10 acres/ single point (T) or >1 acre new impervious (P)?	Yes	No
Does basin have energy dissipation for outlet?	Yes	No
Stabilized emergency overflow outlet?	Yes	No
Was basin constructed /operational concurrent with construction?	Yes	No
Are slopes stabilized with perm cover or temp erosion protection?	Yes	No
Is basin connected to surface waters? Yes Name/description waters: _____		
Was discharge- connection stabilized within 24 hours of connecting?	Yes	No
Dewatering: Onsite to a temp. settling basin? Yes No If offsite, is water turbid?	Yes	No
If no settling basin, was appropriate BMPs for turbidity and scour applied?	Yes	No
Is discharge from site creating a nuisance conditions or WQ violations?	Yes	No

Observations:

Permanent – temporary (circle) sedimentation basins: (location/ID)_____

Required basin installed (> 10 acres/ single point (T) or >1 acre new impervious (P)?	Yes	No
Does basin have energy dissipation for outlet?	Yes	No
Stabilized emergency overflow outlet?	Yes	No
Was basin constructed /operational concurrent with construction?	Yes	No
Are slopes stabilized with perm cover or temp erosion protection?	Yes	No
Is basin connected to surface waters? Yes Name/description waters: _____		
Was discharge- connection stabilized within 24 hours of connecting?	Yes	No
Dewatering: Onsite to a temp. settling basin? Yes No If offsite, is water turbid?	Yes	No
If no settling basin, was appropriate BMPs for turbidity and scour applied?	Yes	No
Is discharge from site creating a nuisance conditions or WQ violations?	Yes	No

Observations:

Permanent – temporary (circle) sedimentation basins: (location/ID)_____

Required basin installed (> 10 acres/ single point (T) or >1 acre new impervious (P)?	Yes	No
Does basin have energy dissipation for outlet?	Yes	No
Stabilized emergency overflow outlet?	Yes	No
Was basin constructed /operational concurrent with construction?	Yes	No
Are slopes stabilized with perm cover or temp erosion protection within 200' of surface water?	Yes	No
Is basin connected to surface waters? Yes Name/description waters: _____		
Was discharge- connection stabilized within 24 hours of connecting?	Yes	No
Dewatering: Onsite to a temp. settling basin? Yes No If offsite, is water turbid?	Yes	No
If no settling basin, was appropriate BMPs for turbidity and scour applied?	Yes	No
Is discharge from site creating a nuisance conditions or WQ violations?	Yes	No

Observations:

APPENDIX F
Post-Construction Stormwater BMP Maintenance Guidance

CITY OF ALEXANDRIA
ENGINEERING STANDARDS FOR STORM WATER TREATMENT FACILITIES

Pond Maintenance Requirements

1. Inspection, maintenance reporting and certification by a professional engineer (Provided by Owner). Information must be submitted to the City as requested by the City Engineer.

2. Excavate pond to original design capacity when one half (1/2) of the wet volume of the pond is lost due to sediment deposition.

3. Remove floatable debris in and around the pond area including, but not limited to: oils, gases, debris and other pollutants, as needed.

4. Maintain landscape adjacent to the facility per original design, including but not limited to: maintenance of the buffer strip and other plant materials as per original plan design, as needed.

5. Maintenance of all erosion control measures including, but not limited to: rip rap, storm sewer outlets, catch basin inlets, etc.

Environmental Manhole Maintenance Requirements

1. Annual inspection, maintenance reporting and certification by a professional engineer (Provided by Owner). Information must be submitted to the City annually.

2. Maintenance should be performed once the sediment or oil depth exceeds the established requirements recommended by the manufacturer.

3. Maintenance should occur immediately after a spill takes place. Appropriate regulatory agencies should also be notified in the event of a spill.

4. Disposal of materials shall be in accordance with local, state and federal requirements as applicable.

Rain Garden Maintenance Requirements

1. Inlet and Overflow Spillway – Remove any sediment build-up or blockage and correct any erosion, as needed.

2. Vegetation – Address the following vegetation maintenance requirements, as needed:
   a. Maintain at least 80% surface area coverage of plants approved per plan.
   b. Removal of invasive plants and undesirable woody vegetation.
   c. Removal of dried, dead and diseased vegetation.
   d. Re-mulch void or disturbed/exposed areas.

3. Annual inspection and maintenance efforts must be documented and submitted to the City.

Infiltration/Filtration Basin Maintenance Requirements

1. Sweep sediment from parking lot 4 times per year.

2. Ongoing and as needed:
   a. Prune and weed to maintain appearance
   b. Remove trash and debris
   c. Maintain at least 80% surface area coverage of plants approved per plan.
   d. Removal of invasive plants and undesirable woody vegetation.
   e. Removal of dried, dead and diseased vegetation.
   f. Re-mulch void or disturbed/exposed areas.

3. Semi-annually:
   a. Remove sediment from inflow points (off-line systems)
   b. Inspect aggregate filter system and clean as needed
   c. Shrubs should be inspected to evaluate health. Remove dead and diseased vegetation.

4. Annually:
   a. Inspect and remove any sediment and debris build-up in pretreatment areas
   b. Inspect inflow points and bioretention surface for build-up of road sand associated with spring melt period. Remove and replant as necessary.

5. 2 to 3 years:
   a. Test pH of planting soils. If pH is below 5.2, add limestone. If pH is 7.0 to 8.0, add iron sulfate plus sulfur.

6. Annual inspection and maintenance efforts must be documented and submitted to the City.

APPENDIX G
Maintenance Agreement

CITY OF ALEXANDRIA
COUNTY OF DOUGLAS
STATE OF MINNESOTA

STORMWATER FACILITIES MAINTENANCE AGREEMENT WITH ACCESS RIGHTS AND CONENANTS

(Insert Project Reference Numbers)

This AGREEMENT, made and entered into this ___ day of _____, 20___, for the maintenance and repair of certain Stormwater Management Facilities is entered into between _____ (hereinafter referred to as "OWNER") and the City of Alexandria (hereinafter referred to as "CITY") for the benefit of the CITY, the OWNER, the successors in interest to the CITY or the OWNER, and the public generally.

WITNESSETH

WHEREAS, the undersigned is the owner of that certain real property lying and being in the _____ Land Lot/District, _____ identified as [Tax Map/Parcel Identification Number] _____ and being more particularly described by deed as recorded in the land records of the City of Alexandria, Minnesota, Deed Book _____ Page ____, hereinafter called the "Property".

WHEREAS, the undersigned is proceeding to build on and develop the property; and has submitted the Site Plan/Subdivision Plan known as _____, (Name of Plan/Development) hereinafter called the "Plan", which is expressly made a part hereof, as approved or to be approved by the City, provides for detention of stormwater within the confines of the property; and

WHEREAS, the City and the undersigned, its successors and assigns, including any homeowners association, (hereinafter the "Landowner") agree that the health, safety, and welfare of the residents of the City of Alexandria, Minnesota, requires that on-site stormwater management facilities be constructed and maintained on the Property; and

WHEREAS, the City requires that on-site stormwater management facilities as shown on the Plan (the "Facilities") be constructed and adequately maintained by the Landowner.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto agree as follows:

(1) When a new drainage control facility is installed, the party having the facility installed shall obtain a copy of the as-built plans from the City of Alexandria Engineering Department. Responsible parties shall make records of the installation and of all maintenance and repair, and shall retain the records for at least ten years. These records shall be made available to the City of Alexandria's City Engineer during Inspection of the facility and at other reasonable times upon request of the City Engineer.

(2) The following operational maintenance activities shall be performed on all permitted systems on a regular basis or as needed:

a) Removal of trash and debris,
b) Inspection of inlets and outlets,
c) Removal of sediments when the storage volume or conveyance capacity of the stormwater management system is below design levels
d) Ensure systems designed for infiltration are drawing down within 48 hours, and
e) Stabilization and restoration of eroded areas.

(3) Specific operational maintenance activities are required, depending on the type of permitted system, in addition to the practices listed in subsection (2), above.

a) Retention, swale and underdrain systems shall include provisions for:
    1. Mowing and removal of grass clippings, and
    2. Aeration, tilling, or replacement of topsoil as needed to restore the percolation capability of the system. If tilling or replacement of the topsoil is utilized, vegetation must be established on the disturbed surfaces.
b) Exfiltration systems shall include provisions for removal of sediment and debris from pretreatment or sediment collection systems.
c) Wet detention systems shall include provisions for operational maintenance of the littoral zone. Replanting shall be required if the percentage of vegetative cover falls below the permitted level. It is recommended that native vegetation be maintained in the littoral zone as part of the system's operation and maintenance plan. Undesirable species such as cattail and exotic plants should be controlled if they become a nuisance.
d) Dry detention systems shall include provisions for mowing and removal of grass clippings.

(4) If the system is not functioning as designed and permitted, operational maintenance must be performed immediately to restore the system. If operational maintenance measures are insufficient to enable the system to meet the design and performance standards of this chapter, the permittee must either replace the system or construct an alternative design.

(5) In the event the Landowner fails to maintain the Facilities in good working condition acceptable to the City, the City may enter upon the Property and take such steps as are necessary to correct deficiencies identified in the inspection report and to charge the costs of such repairs to the Landowner. This provision shall not be construed to allow the City to erect any structure of permanent nature on the land of the Landowner outside of the easement for the stormwater management facilities. It is expressly understood and agreed that the City is under no obligation to routinely maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the City. The Landowner grants to the City, its authorized agents and employees, a non-exclusive, perpetual easement over, across, under and through the Property for such purposes.

IN WITNESS THEREOF, the parties hereto acting through their duly authorized agents have caused this Agreement to be signed, sealed and delivered:

(Insert Company/Corporation/Partnership Name) [SEAL]

_____

By: (Type Name and Title)

The foregoing Agreement was acknowledged before me
this ____ day of _____, 20___, by

_____

Unofficial Witness

_____

NOTARY PUBLIC

My Commission Expires: _____

CITY OF ALEXANDRIA, MINNESOTA

ATTACHMENT 1: CITY OF ALEXANDRIA ENGINEERING STANDARDS FOR STORM WATER TREATMENT FACILITIES

Pond Maintenance Requirements

1. Inspection, maintenance reporting and certification by a professional engineer (Provided by Owner). Information must be submitted to the City as requested by the City Engineer.

2. Excavate pond to original design capacity when one half (1/2) of the wet volume of the pond is lost due to sediment deposition.

3. Remove floatable debris in and around the pond area including, but not limited to: oils, gases, debris and other pollutants.

4. Maintain landscape adjacent to the facility per original design, including but not limited to: maintenance of the buffer strip and other plant materials as per original plan design.

5. Maintenance of all erosion control measures including but not limited to: rip rap storm sewer outlets, catch basin inlets, etc.

Environmental Manhole Maintenance Requirements

1. Annual inspection, maintenance reporting and certification by a professional engineer (Provided by Owner). Information must be submitted to the City annually.

2. Maintenance should be performed once the sediment or oil depth exceeds the established requirements recommended by the manufacturer.

3. Maintenance should occur immediately after a spill takes place. Appropriate regulatory agencies should also be notified in the event of a spill.

4. Disposal of materials shall be in accordance with local, state and federal requirements as applicable.

Rain Garden Maintenance Requirements

1. Inlet and Overflow Spillway – Remove any sediment build-up or blockage and correct any erosion.

2. Vegetation
   a. Maintain at least 80% surface area coverage of plants approved per plan.
   b. Removal of invasive plants and undesirable woody vegetation.
   c. Removal of dried, dead and diseased vegetation.
   d. Re-mulch void or disturbed/exposed areas.

3. Annual inspection and maintenance efforts must be documented and submitted to the City.

Filtration Basin Maintenance Requirements

1. Sweep sediment from parking lot 4 times per year

2. Ongoing and as needed:
   a. Prune and weed to maintain appearance
   b. Remove trash and debris
   c. Maintain at least 80% surface area coverage of plants approved per plan.
   d. Removal of invasive plants and undesirable woody vegetation.
   e. Removal of dried, dead and diseased vegetation.
   f. Re-mulch void or disturbed/exposed areas.

3. Semi-annually:
   a. Remove sediment from inflow points (off-line systems)
   b. Inspect aggregate filter system and clean as needed
   c. Shrubs should be inspected to evaluate health. Remove dead and diseased vegetation.

4. Annually:
   a. Inspect and remove any sediment and debris build-up in pre-treatment areas
   b. Inspect inflow points and bioretention surface for buildup of road sand associated with spring melt period. Remove and replant as necessary.

5. 2 to 3 years:
   a. Test pH of planting soils. If pH is below 5.2, add limestone. If pH is 7.0 to 8.0, add iron sulfate plus sulfur.

6. Annual inspection and maintenance efforts must be documented and submitted to the City.

Minimum Control Measure 6
Pollution Prevention and Good Housekeeping Practices for Municipal Facilities

TABLE OF CONTENTS

APPENDICES

1. INTRODUCTION

1.1. Basis for the Standard Operating Procedures (SOPs)

On August 1, 2013, the Minnesota Pollution Control Agency issued a National Pollutant Discharge Elimination System (NPDES) General Permit (GP) for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (MS4s). The MS4 GP requires the City of Alexandria to alter their own actions as well as work with other governmental agencies to help ensure a reduction in the amount and type of pollution that:

- Collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways.
- Results from actions such as environmentally damaging land development and flood management practices or poor maintenance of storm sewer systems.

This SOP manual will assist the City of Alexandria in using targeted best management practices that are intended on reducing the discharge of pollutants from municipal activities.

1.2. Objectives of the SOPs

This manual is intended to provide guidance on Good Housekeeping Practices for Municipal Operations as follows:

- Provide BMPs used for municipal activities.
- Provide methods for employing spill prevention and response.
- Provide tools for documenting inspections of ponds, structural stormwater BMPs, outfalls, and municipal facilities.

1.3. Training, Inspection, and Maintenance

City employees shall receive job relevant training at regular intervals with an emphasis on protecting water quality. New and seasonal employees shall receive training upon their return to work. All employees shall receive training when changes in procedures, practices, techniques, or requirements takes place. Documentation of stormwater management training events including a list of topics covered, names of employees in attendance, and date of each event shall be kept on file at the City.

Using the inspection forms in Appendix B, trained employees shall inspect as follows:

- Municipal Facility and Stockpiles – quarterly
- Structural Stormwater BMPs – annually
- Ponds – one time per MS4 permit cycle
- Outfalls – one time per MS4 permit cycle

Based on inspection findings, determination shall take place of if repair, replacement, or maintenance measures are necessary in order to ensure the structural integrity, proper function, and treatment effectiveness of structural stormwater BMPs. Necessary maintenance shall be completed as soon as possible to prevent or reduce the discharge of pollutants to stormwater.

2. POLLUTION PREVENTION

2.1. Dumpsters/Garbage Storage

Activities and Definition

Potential for pollutants can occur if proper garbage management is not in place. An appropriate number of dumpster should be located throughout the facility to provide enough storage for daily activities. In addition facility dumpsters are to be marked for proper materials disposal.

Preparation

a. Train employees on proper trash disposal.
b. Locate dumpsters and trash cans in convenient, easily observable areas.
c. Provide properly labeled recycling bins to reduce the amount of garbage disposed.
d. Where applicable install berms, curbing, or vegetation strips around storage areas to control water entering/leaving storage areas.
e. Whenever possible store garbage containers beneath a covered structure or inside to prevent contact with stormwater.

Process

a. Inspect garbage bins for leaks regularly and have repairs made immediately by responsible party.
b. Request/use dumpsters and trash cans with lids and without drain holes.
c. Locate dumpsters on a flat, hard surface that does not slope or drain directly into the storm drain system.

Clean-up/Follow-up

a. Keep areas around dumpsters clean of all garbage.
b. Have garbage bins emptied regularly to keep from overfilling.
c. Wash out bins or dumpsters over floor drains connected to sanitary sewer system as needed to keep odors from becoming a problem.

Documentation

a. NA

2.2. Parking Lot Maintenance

Activities and Definition

Parking Lots can potentially generate increased pollutant loads to the stormwater system from run-off. A well maintained parking surface can help to reduce some of those pollutant concerns.

Preparation

a. Conduct regular employee training to reinforce proper housekeeping.
b. Restrict parking in areas to be swept prior to and during sweeping using regulations as necessary.
c. Perform regular maintenance and services in accordance with the recommended vehicle maintenance schedule on sweepers to increase and maintain efficiency.

Process

a. Sweep parking areas, at a minimum of twice annually, or as needed, or as directed by the City's responsible official.
b. Hand sweep sections of gutter if soil and debris accumulate.
c. Pick-up litter as required to keep parking areas clean and orderly.

Clean-up/Follow-up

a. Dispose of sweepings properly (appropriate facility).
b. Street sweepers to be cleaned out in a manner as instructed by the manufacturer and in a location that swept materials cannot be introduced into a storm drain.
c. Swept materials will not be stored in locations where stormwater could transport fines into the storm drain system.

Documentation

a. NA

2.3. Parks – Chemical Application Pesticides, Herbicides, Fertilizers

Activities and Definition

A pivotal part of the beautification of the city is a great parks system. The health and beauty of lawns and natural areas take the application of some chemicals and fertilizers.

Preparation

a. Ensure seasonal and full-time City staff are adequately trained in proper use and application of fertilizers and pesticides for maintenance of City lands.

b. Make sure your state Chemical Handling Certification is complete and up-to-date before handling any chemicals.
c. Calibrate fertilizer and pesticide application equipment to avoid excessive application.
d. Use pesticides only if there is an actual pest problem and periodically test soils for determining proper fertilizer use.
e. Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendations for best results ("Read the Label").
f. Know the weather conditions. Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).

Process

a. Always follow the manufacturer's recommendations for mixing, application and disposal ("Read the Label").
b. Do not mix or prepare pesticides for application near storm drains. Preferably mix pesticides inside a protected area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
c. Employ techniques to minimize off-target application (e.g. spray drift, over broadcasting.) of pesticides and fertilizers.

Clean-up/Follow-up

a. Sweep pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.
b. Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
c. Always follow all federal and state regulations governing use, storage and disposal of fertilizers, herbicides or pesticides and their containers ("Read the Label").

Documentation

a. NA

2.4. Parks – Cleaning Equipment

Activities and Definition

There are many benefits to taking proper care of the City's equipment. Prolonging the life of the equipment by taking the time to maintain critical parts is an essential part of the Parks departments daily activities.

Preparation

a. Review process with all Parks employees.

Process

a. Wipe off dirt, dust and fluids with disposable towel.
b. Wash equipment in approved wash station.

Clean-up/Follow-up

a. Dispose of towels in proper trash receptacle
b. Sweep floor and dispose of debris.

Documentation

a. NA

2.5. Parks – Mowing and Trimming

Activities and Definition

Regular mowing and trimming activities have potential to deposit materials onto hard surfaces. Care should be taken to insure mowing or trimming refuse is disposed of properly.

Preparation

a. Process overview with employees.
b. Check the oil and fuel levels of the mowers and other equipment. Fill in proper areas if needed.

Process

a. Install temporary catch basin protection on potentially affected basins.
b. Put on eye and hearing protection.
c. Mow and trim the lawn.
d. Sweep or blow clippings to grass areas.
e. Remove inlet protection if used.

Clean-up/Follow-up

a. Mowers are to be scraped and brushed at designated location.
    1. Dry spoils are dry swept and disposed of properly
b. Wash equipment in approved wash station.

Documentation

a. NA

2.6. Parks – Open Space Management

Activities and Definition

Open space provides great value to the park system that go beyond ball fields. This includes stormwater retention and potential flood relief.

Preparation

a. Provide a regular observation and maintenance of parks, golf courses, and other pubic open spaces.
b. Identify public open spaces that are used for stormwater detention and verify that detention areas are included on the storm drain system mapping, inspection schedules, and maintenance schedules.

Process

a. Ensure that any storm drain or drainage system components on the property are properly maintained.
b. Avoid placing bark mulch (or other floatable landscaping materials) in stormwater detention areas or other areas where stormwater runoff can carry the mulch into the storm drainage system.
c. Follow all SOPs related to irrigation, mowing, landscaping, and pet waste management.

Clean-up/Follow-up

a. Keep all outdoor work areas neat and tidy. Clean by sweeping instead of washing whenever possible. If areas must be washed, ensure that wash water will enter a landscaped area rather than the storm drain. Do not use soap for outdoor washing.
b. Pick up trash on a regular basis.

Documentation

a. NA

2.7. Parks – Pet Waste

Activities and Definition

Pet waste has the potential to be a contributor to downstream degradation if not maintained and properly disposed of.

Preparation

a. Adopt and enforce ordinances that require pet owners to clean up pet wastes and use leashes in public areas. If public off-leash areas are designated, make sure they are clearly defined. Avoid designating public off-leash areas near streams and water bodies.
b. Whenever practical and cost effective, install dispensers for pet waste bags and provide disposal containers at locations such as trail heads or parks where pet waste has been a problem. Provide signs with instructions for proper cleanup and disposal.

Process

a. Check parks and trails for pet waste as needed.
b. Check public open space for pet waste prior to mowing and watering.
c. Provide ordinance enforcement as needed.

Clean up / follow-up

a. Remove all pet waste; provide temporary storage in a covered waste container, and dispose of properly. Preferred method of disposal is at a solid waste disposal facility.

Documentation

a. Document problem areas for possible increased enforcement and/or public education signs.

2.8. Parks – Planting Vegetation (Starters)

Activities and Definition

Vegetation is a key component of establishing healthy ecosystems that hold water and nutrients on site.

Preparation

a. Call the appropriate numbers for location of utilities.
b. Decide where any spoils will be taken.

Process

a. Dig holes; place spoils near the hole where they may easily be placed back around the roots. Avoid placing spoils into the gutter system.
b. Bring each plant near the edge of the hole dug for it.

c. Check the depth of the hole, and adjust the depth if necessary. The depth of the hole for a tree should be as deep as the root ball, so that the top of the root ball is level with the top of the hole.
d. Carefully remove pot or burlap
e. Place the plant in the hole
f. Backfill the hole with existing spoils, compost, and a litter fertilizer if desired. Do not use excessive amendments.
g. Water the plant.
h. Stake the plant if necessary to stabilize it.

Clean-up/Follow-up

a. Remove any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.
b. Sweep dirt from surrounding pavement(s) into the planter area.
c. Transport spoils to their designated fill or disposal area.

Documentation

a. N/A

2.9. Parks – Planting Vegetation (Seeds)

Activities and Definition

Vegetation is a key component of establishing healthy ecosystems that hold water and nutrients on site

Preparation

a. Call the appropriate numbers for location of utilities.
b. Decide where any spoils will be taken.
c. Decide on the application rate, method, water source, and ensure adequate materials are on hand.
d. Grade and prepare soil to receive the seed. Place any extra soil in a convenient location to collect.

Process

a. Place the seed and any cover suing the pre-determined application method (and rate).
b. Lightly moisten the seed.

Clean-up/Follow-up

a. Remove any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.
b. Sweep dirt from surrounding pavement(s) into the planter area.
c. Transport spoils to their designated fill or disposal area.

Documentation

a. NA

2.10. Parks – Transporting Equipment

Activities and Definition

Equipment Transportation is a pivotal part of the daily activities that occurs on a daily basis.

Preparation

a. Determine equipment needed for transport and method (trailer, truck bed) needed to transport equipment.
b. Conduct pre-trip inspection of equipment.

Process

a. Load and secure equipment on trailer or truck.
b. Load and secure fuel containers for equipment usage.

Clean-up/Follow-up

a. Off load equipment.
b. Store equipment and trailer in proper location.
c. Conduct post-trip inspection of equipment.
d. Wash equipment if needed, according to the written procedure for Cleaning Equipment.

Documentation

a. NA

2.11. Stormwater – Pond Assessment Procedures (TSS & TP)

Activities and Definition

The following pond assessment procedures and schedule shall be followed to determine the Total Suspended Solids (TSS) and Total Phosphorous (TP) treatment effectiveness of City-owned and operated ponds that are constructed for the collection and treatment of stormwater (Appendix C).

Assessment Procedure

At the initiation of the pond assessment, the City shall evaluate the City-owned and operated stormwater treatment ponds in year 1 to determine the highest priority pond(s) for assessing TSS and TP effectiveness. In order to create a pond assessment schedule for the City-owned and operated stormwater treatment ponds the City shall prioritize ponds to assess using the following criteria:

- Age of pond.
- Contributing drainage area characteristics (size, land use, upland treatment, etc.).
- Estimate of pond loading
- Known concerns based on inspections.
- Type and location of receiving water.
- Sensitivity of receiving water.
- Complaints received from the public.

The ponds that have been identified as having the highest priority shall be added to a schedule to receive a more thorough assessment in year 1. The remaining ponds will be reassessed in year 2-5 using the same criteria, until all ponds have been assessed within the 5-year MS4 permit term.

Additional Survey of Pond

From the initial assessment completed in year 1, the City will perform a more thorough analysis of the ponds that are found to be half full of sediment, as well as the ponds that are continually showing signs of needing maintenance (i.e. public complaint, significant vegetation growth, etc.). The following steps shall be taken to assess the City pond(s) for TSS and TP treatment effectiveness:

a. Gathering of background information. This may include the following:
    - Original design information, if available (record drawings, design calculations, etc.).
    - Determination of contributing drainage area.
    - As-built survey information, if completed and available.
    - Other significant information available that pertains to the pond.

b. Site investigation and/or survey of existing pond conditions. This may include the following:
   - Determination of sediment levels in the pond.
   - Identification of outlet details (elevations, type and condition of structure(s), etc.).
   - Identification of inlet details (number, type, elevations, etc.).
   - Other significant pond characteristics and details.

c. Desktop evaluation of existing TSS and TP treatment effectiveness by completing water quality calculations using the survey data obtained, P8, Pondnet, or other suitable modeling methods.

Clean-up/Follow-up

a. Once the assessment of each pond is complete, the City shall determine if maintenance is required to ensure proper function and treatment effectiveness of the ponds. The City shall use 2.12 Pond Sediment Removal Projects and/or 2.13 Routine Pond Maintenance for pond maintenance needs.
b. Schedule pond maintenance activities.

Documentation

a. Record results from the analysis of the ponds that were prioritized, including inspection results.

2.12. Stormwater – Pond Sediment Removal Projects

Activities and Definition

Stormwater ponds remove pollutants transported by rain events through settling and biological uptake. To function properly, stormwater ponds need to have volume to hold water and wetland plants along the pond edges and shallow areas. Removing sediment and debris on a regular basis will help the system in getting the most TP and TSS removal.

Preparation

a. The MPCA requires the City to sample sediment prior to dredging to determine concentrations of 17 cPAHS, non-carcinogenic PAHs, arsenic, and copper.
   1. If the annual volume of sediment to be removed is less than 100 cubic yards, then no chemical testing or sediment characterization is required; however, the City is responsible for the due diligence in the reuse and/or disposal of this material.
   2. When more than 100 cubic yards of sediment need to be removed, the City will need to complete further analysis of the pond sediment. The sediment will

need to be tested and disposed of in accordance with the guidance found in the MPCA's Sediment Removal Guidance (Appendix D).

3. Testing of the ponds can be done so that areas of the pond can be segregated (e.g., if areas of the pond such as the inlets are identified to have the highest concentrations the areas around the inlet could be disposed of differently as compared to the remainder of the pond, if the areas can be segregated sufficiently).

b. If chemical testing or sediment characterization is required, the sediment samples shall be sent to an analytical laboratory for review.
c. Once the results from the analytical laboratory have been received, a maintenance and disposal plan will be developed based on the test results. The City shall use sediment removal guidance from the MPCA in Appendix D.
d. Schedule the pond maintenance work for a time when dry weather is expected. Sediment excavation projects are recommended to take place in the winter months or during a period of the year when dry conditions are expected.
e. Remove any sediment and trash from grates, placing it in a truck for disposal.
f. Do a visual inspection to make sure any grates, structures, manholes, and pipes are in good working order. Remove manhole covers and grates as necessary for inspecting.

Process

a. Provide outlet protection where feasible to minimize the amount of sediment and debris that might leave basin during sediment removal process.
b. Start removing sediment from basin by using backhoe to remove debris and sediment off the bottom.
c. Continue removing sediment from pond bottom as necessary by sweeping and shoveling.
d. Put all material removed from the pond into a dump truck.
e. Some structures might require use of a vacuum truck. If so, use the same procedures described for cleaning catch basins.

Clean-up/Follow-up

a. After removing sediment from the basin, clean off the concrete pads using dry methods (sweeping and shoveling).
b. Dispose of sediment and debris according to disposal plan.
c. Site restoration work, if applicable, shall be conducted as soon as weather conditions permit and may include:
    1. Additional clean-up or maintenance of inlet and outlet structures.
    2. Additional site stabilization work including sediment and erosion control.
    3. Establishing plant, seed, sod, mulch or vegetation to prevent erosion (above waterline).
    4. Professional engineer to sign-off on project completion

Documentation

a. Keep documentation of each detention basins/pond cleaned.
b. The following records and documentation shall be kept on file:
    1. Unique Pond identification number.
    2. Date of excavation.
    3. Volume of sediment removed.
    4. Laboratory results.
    5. Location of final disposal of sediment.
    6. As-Built prints or plans, if available.
    7. Contractor information, shipping papers/manifests/contractual agreements, if available.
    8. Any notes or comments of any other observations about the removal that will help the City operate and maintain that site in the future.

2.13. Stormwater – Routine Pond Maintenance

Activities and Definition

Stormwater ponds remove pollutants transported by rain events through settling and biological uptake. To function properly, stormwater ponds need to have volume to hold water and wetland plants along the pond edges and shallow areas. Performing maintenance to stormwater ponds is critical for the long-term operation of the MS4 system. Routine maintenance is considered a maintenance project that will remove less than 100 cubic yard of material.

Preparation

a. Schedule the pond maintenance work for a time when dry weather is expected.
b. Do a visual inspection to make sure any grates, structures, manholes, and pipes are in good working order. Remove manhole covers and grates as necessary for inspecting.

Process

a. Provide outlet protection where feasible to minimize the amount of debris that might leave basin during cleaning process.
b. Perform routine maintenance, which may include:
    a. Removal of trash and other accumulated debris from trash grate.
    b. Removal of vegetation around and/or in front of the outlet structure.
    c. Repair of side slopes to mitigate erosion issues.
    d. Replacement of riprap in front of the outlet to prevent future scour and erosion.
c. Continue cleaning structures and surrounding area as necessary by sweeping and shoveling.
d. Put all material removed from the pond into a dump truck.

e. Some structures might require use of a vacuum truck. If so, use the same procedures described for cleaning catch basins.

Clean-up/Follow-up

a. After performing maintenance, clean off the concrete pads using dry methods (sweeping and shoveling).
b. Properly dispose of the material that was removed. The City is responsible for the due diligence in the reuse and/or disposal of this material.
c. Site restoration work, if applicable, shall be conducted as soon as weather conditions permit and may include:
    1. Additional clean-up or maintenance of inlet and outlet structures.
    2. Additional site stabilization work including sediment and erosion control.
    3. Establishing plant, seed, sod, mulch or vegetation to prevent erosion (above waterline).
    4. Professional engineer to sign-off on project completion

Documentation

a. Keep documentation of each detention basins/pond cleaned including date, individuals involved in cleaning, and a description of the type of debris removed.
b. Record the amount of waste collected.
c. Keep any notes or comments of any other observations about the maintenance that will help the City operate and maintain that site in the future.

2.14. Stormwater – Outfalls

Activities and Definition

Inspection and maintenance of every stormwater outfall (with the exception of underground outfalls) shall be completed one time per MS4 permit cycle (approximately 5 years).

Preparation

a. Review Outfall Inspection Form (Appendix B).
b. Determine which outfalls to inspect each year.

Process

a. Inspect using the Outfall Inspection Form (Appendix B) preferably during dry weather conditions.
b. Note any illicit discharges and report appropriately.
c. Evaluate functionality, erosion around, and maintenance needs.

Clean-up/Follow-up

a. If needed, maintain, clean, or replace outfall.

Documentation

a. File all inspection reports in the Stormwater Permit Binder.

2.15. Stormwater – Structural Stormwater BMPs

Activities and Definition

Structural Stormwater BMP inspection and maintenance (with the exception of stormwater ponds) shall be completed annually to ensure the functionality of the storm sewer system. Structural BMPs include, but are not limited to: environmental/drop manholes, mechanical treatment systems, infiltration basins, and pervious pavement.

Preparation

c. Review Structural Stormwater BMP Inspection Form (Appendix B).
d. Do visual inspection of area surrounding BMPs.

Process

d. Inspect using the Structural Stormwater BMP Inspection Form (Appendix B) preferably during dry weather conditions.
e. Note any illicit discharges and report appropriately.
f. Evaluate functionality, erosion around, and inflow/outflow of BMP.
g. Ensure that contributing area, practice, and inlets are clear of debris and stabilized.
h. Maintain environmental manholes and mechanical treatment systems using a high powered vacuum truck to suck out standing water, oil, sediment, and floatables.
i. Maintain infiltration basins as follows:
    1. Replace pea gravel/topsoil and top surface filter fabric when clogged.
    2. Remove sediment and oil/grease from pre-treatment devices, as well as overflow structures, as needed.
    3. Mow grass filter strips as necessary and remove grass clippings.
    4. Repair undercut and eroded areas at inflow and outflow structures, as necessary.
    5. Remove trees that start to grow in the vicinity of the trench.
    6. Disc or otherwise aerate and de-thatch basin bottom if not infiltrating as designed.
j. Maintain pervious pavement as follows:
    1. Sweep twice annually.
    2. Remove stockpiled mulch, sand, salt, soil, or yard waste on pervious pavement immediately.

Clean-up/Follow-up

b. Safely transport removed materials to a designated location to dump onto a drying bed.
c. When the water evaporates, clean up the materials with a backhoe/skid loader, put it into dump truck and take to permanent disposal site (landfill).

Documentation

a. File all inspection reports in the Stormwater Permit Binder.

2.16. Streets/Storm Drain – Catch Basin Cleaning

Activities and Definition

Catch Basin Cleaning needs to be completed on a regular basis to insure the functionality of the stormsewer system.

Preparation

e. Clean sediment and trash off of grate.
f. Do visual inspection on outside of grate.
g. Make sure nothing needs to be replaced.
h. Do inside visual inspection to see what needs to be cleaned.

Process

k. Clean using a high powered vacuum truck to start sucking out standing water and sediment.
l. Use a high pressure washer to clean any remaining material out of catch basin, while capturing the slurry with the vacuum.
m. After catch basin is clean, send the rodder of the vacuum truck downstream to clean pipe and pull back sediment that might have gotten downstream of pipe.
n. Move truck downstream of pipe to next catch basin.

Clean-up/Follow-up

d. When vacuum truck is full of sediment, take it to the designated location to dump all the sediment out of truck into a drying bed.
e. When it evaporates, clean it up with a backhoe/skid loader, put it into dump truck and take to permanent disposal site (landfill).

Documentation

a. Keep any notes or comments of any problems.

2.17. Streets/Storm Drain – Curb Painting

Activities and Definition

Storm drains are gateways that allow pollutants in stormwater to flow untreated from local streets to lakes, rivers and streams. Residual oil, grease, solids, antifreeze, cigarette butts, yard waste, plastic and other wastes found on roads, parking lots and driveways pollute downstream waters by increasing phosphorus levels, reducing oxygen levels and ultimately impairing aquatic habitat for fish and other organisms as well as drinking water sources.

Preparation

a. Calculate the amount of paint required for the job.
b. Use water based paints if possible.
c. Determine whether the wastes will be hazardous or not and the required proper disposal of said wastes. Prepare surfaces to be painted without generating wastewater by sandblasting and/or scraping.
d. Thoroughly sweep up all sand, blastings, and/or paint scrapings.
e. If paint stripping is needed, use a citrus-based paint remover whenever possible since it is less toxic than chemical strippers.
f. If wastewater will be generated, use curb, dyke, etc. around the activity to collect the filter and collect the debris.

Process

a. Paint curb.
b. Prevent over-spraying of paints and / or excessive sandblasting.
c. Use drip pans and drop clothes in areas of mixing paints and painting.
d. Store latex paint rollers and brushes in air tight bags to be reused later with the same color.
e. Have available absorbent material and other BMP's ready for an accidental paint spill.

Clean-up/Follow-up

a. Paint out brushes and rollers as much as possible. Squeeze excess paint from brushes and rollers back into the containers prior to cleaning them.
b. Pour excess paint from trays and buckets back into the paint can containers and wipe with cloth or paper towels. Dispose of the towels according to the recommendations on the paint being used.
c. Rinse water-based paint brushes in the sink after pre-cleaning. Never pour excess paint or wastewater from cleanup of paint in the storm drain.

d. Cleanup oil based paints with paint thinner. Never clean oil based brushes in a sink or over a storm drain. Filter solvents for reuse if possible and / or store in approved drum for recycling.
e. Dispose of waste collected by placing it in a garbage container. Left-over paint and solvents should be stored for later use (do not place these liquids in the garbage).

Documentation

a. Write-up / report of any discharges into storm drain system.

2.18. Streets/Storm Drain – Creek Management

Activities and Definition

Storm drains, streets, and creeks are gateways that allow pollutants in stormwater to flow untreated from local streets to lakes, rivers and streams. Residual oil, grease, solids, antifreeze, cigarette butts, yard waste, plastic and other wastes found on roads, parking lots and driveways pollute downstream waters by increasing phosphorus levels, reducing oxygen levels and ultimately impairing aquatic habitat for fish and other organisms as well as drinking water sources.

Preparation

a. Monitor streams on a regular basis (Annually)
b. Check culverts and crossings after every storm.
c. Maintain access to stream channels wherever possible.
d. Identify areas requiring maintenance.
e. Determine what manpower or equipment will be required.
f. Identify access and easements to area requiring maintenance.
g. Determine method of maintenance that will be least damaging to the channel.
h. Obtain stream alteration permit.

Process

a. Remove unwanted material (debris, branches, soil) from the creek channel and place it in a truck to be hauled away.

Clean up / follow-up

a. Stabilize all disturbed soils.
b. Remove all tracking from paved surfaces near maintenance site, if applicable.
c. Haul all debris or sediment removed from area to approved dumping site.

Documentation

a. Keep log of actions performed including date and individuals involved.
b. Record the amount of materials removed or imported.
c. Keep any notes or comments of any problems.
d. Use "before" and "after" photographs to document activities as applicable.

2.19. Streets/Storm Drain – Ditch Management

Activities and Definition

Storm drains are gateways that allow pollutants in stormwater to flow untreated from local streets to lakes, rivers and streams. Residual oil, grease, solids, antifreeze, cigarette butts, yard waste, plastic and other wastes found on roads, parking lots and driveways pollute downstream waters by increasing phosphorus levels, reducing oxygen levels and ultimately impairing aquatic habitat for fish and other organisms as well as drinking water sources.

Preparation

a. Monitor ditches on a regular basis (Annually)
b. Maintain access to ditch channels wherever possible.
c. Contact affected property owners and utility owners.

Process

a. Identify areas requiring maintenance.
b. Determine what manpower or equipment will be required.
c. Identify access and easements to area requiring maintenance.
d. Determine method of maintenance that will be least damaging to the channel and adjacent properties or utilities.

Clean-up/Follow-up

a. Stabilize all disturbed soils.
b. Remove all tracking from paved surfaces near maintenance site, if applicable.
c. Haul all debris or sediment removed from area to approved dumping site.

Documentation

a. Keep log of actions performed including date and individuals involved.
b. Record the amount of materials removed or imported.
c. Keep any notes or comments of any problems.
d. Use "before" and "after" photographs to document activities as applicable.

2.20. Streets/Storm Drain – Overlays and Patching

Activities and Definition

Pollutants collect on surfaces in between storm events as a result of atmospheric deposition, vehicle emissions, winter road maintenance, construction site debris, trash, road wear and tear. Overlays and patching are a part of the maintenance of these surfaces that help prolong the life of the roadway.

Preparation

a. Measure and mark locations of manholes and valves on the curb
b. Apply temporary covers to manholes and catch basins to prevent oil and materials from getting inside of them.
c. Cracks should be properly sealed. Alligator cracks and potholes should be removed and patched. Rutting should be milled.
d. Surface should be clean and dry.
e. Uniform tack coat applied and cured prior to placement of overlay.
f. If milling is required, install inlet protection as needed.

Process

a. Check hot asphalt mix for proper temperature, percentage asphalt, gradation, air voids, and any other agency requirements.
b. Raise manhole lids and valves to elevation of new asphalt surface with riser rings.
c. Surface texture should be uniform, no tearing or scuffing.
d. Rolling should be done to achieve proper in-place air void specification.

Clean up / follow-up

a. Covering should be removed as soon as the threat of imported materials entering the system is reduced and prior to a storm event.
b. After pavement has cooled, sweep gutters to remove loose aggregate.

Documentation

a. NA

2.21. Streets/Storm Drain – Shouldering and Mowing

Activities and Definition

Pollutants collect on surfaces in between storm events as a result of atmospheric deposition, vehicle emissions, winter road maintenance, construction site debris, trash, road wear and tear, and litter from adjacent lawn maintenance (grass clippings). The

shoulders of the road should be properly maintained to insure infiltration and other techniques for stormwater run-off are working with the most efficiency.

Preparation

a. Set up temporary traffic control devices

Process

a. Place import material as needed and perform grading to achieve proper drainage.
b. Mulch clippings to help reduce the amount of supplemental fertilizer required.

Clean up / follow-up

a. Clean any loose material off asphalt or gutter.

Documentation

a. NA

2.22. Streets/Storm Drain – Secondary Road Maintenance

Activities and Definition

Plans that are submitted to the City for approval will have a review process to guarantee that erosion and sediment control standards are being met.

Preparation

a. Determine length amount and type of roadbase or gravel that will be needed.
b. Determine proper equipment to be used and or any safety hazards.
c. Design proper drainage: slopes, berms, etc.

Process

a. Have truck drivers follow a designated route for hauling in the soil (See SOP for transporting soil and gravel).
b. If soils are too dry to achieve compaction, loosen surface material and moisture condition.
c. Smooth or grade soil with the desired crown or cross-slope.
d. Compact soil.

Clean up/Follow-up

a. Replace filter fabric with washed rock (if necessary) on monthly maintenance.
b. Clean up equipment according to the SOP for Cleaning Equipment

c. Clean up any debris on traveled roads, and dispose of it in the landfill.

Documentation

a. NA

2.23. Streets/Storm Drain – Concrete Work

Activities and Definition

The use of concrete is a common practice for BMP maintenance, proper management of those materials is critical for pollution prevention.

Preparation

a. Train employees and contractors in proper concrete waste management.
b. Store dry and wet materials under cover, away from drainage areas.
c. Remove any damaged concrete that may need to be replaced.
d. Prepare and compact sub-base.
e. Set forms and place any reinforcing steel that may be required.
f. Determine how much new concrete will be needed.
g. Locate or construct approved concrete washout facility.

Process

a. Install inlet protection as needed.
b. Avoid mixing excess amounts of fresh concrete on-site.
c. Moisten sub-base just prior to placing new concrete. This helps keep the soil from wicking moisture out of the concrete into the ground.
d. Place new concrete in forms.
e. Consolidate new concrete.
f. Screed off surface.
g. Let concrete obtain its initial set.
h. Apply appropriate surface finish.
i. Remove forms when concrete will not slump.

Clean-up/Follow-up

a. Perform washout of concrete trucks and equipment in designated areas only.
b. Do not washout concrete trucks or equipment into stormdrains, open ditches, streets or streams.
c. Cement and concrete dust from grinding activities is swept up and removed from the site.
d. Remove dirt or debris from street and gutter.

Documentation

a. N/A

2.24. Streets/Storm Drain – Garbage Storage

Activities and Definition

Illegal dumping of non-hazardous household waste and improper dumping of yard waste in streets, storm drains, wetlands, lakes, and other water bodies pollutes surface waters. Non-hazardous household waste includes items such as tires, furniture, common household appliances and other bulk items. Yard waste includes any organic debris such as grass clippings, leaves, and tree branches.

Preparation

a. Locate dumpsters and trash cans with lids in convenient, easily observable areas.
b. Provide properly labeled recycling bins to reduce the amount of garbage disposed.
c. Provide training to employees to prevent improper disposal of general trash.

Process

a. Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.
b. Locate dumpsters on a flat, impervious surface that does not slope or drain directly into the storm drain system.
c. Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.
d. Keep lids closed when not actively filling dumpster.

Clean-up/Follow-up

a. Keep areas around dumpsters clean of all garbage.
b. Have garbage bins emptied as often as needed to keep from overfilling.
c. Wash out bins or dumpsters as needed to keep odors from becoming a problem. Wash out in properly designated areas only.

Documentation

a. N/A

2.25. Streets/Storm Drain – Snow Removal and De-icing

Activities and Definition

The concentration of chloride is increasing in our surface and ground water largely due to stormwater runoff from road salt storage piles, areas of excessive application, or simply from years of repeated application since chloride does not degrade in soil and water. Chloride in road salt and road salt additives (e.g. ferrocyanide for anti-caking) can create toxic conditions for fish, insects and vegetation.

Preparation

a. Store de-icing material under a covered storage area or in an area where water coming off the de-icing materials is collected and delivered to the sanitary sewer or reused as salt brine.
b. Slope loading area away from storm drain inlets.
c. Design drainage from loading area to collect runoff before entering stormwater system.
d. Washout vehicles (if necessary) in approved washout area before preparing them for snow removal.
e. Calibrate spreaders to minimize amount of de-icing material used and still be effective.
f. Provide vehicles with spill cleanup kits in case of hydraulic line rupture or other spill.
g. Train employees in spill cleanup procedures and proper handling and storage of de-icing materials.

Process

a. Load material into trucks carefully to minimize spillage.
b. Periodically dry sweep loading area to reduce the amount of de-icing materials exposed to runoff.
c. Distribute the minimum amount of de-icing material to be effective on the roads.
d. Do not allow spreaders to idle while distributing de-icing materials.
e. Park trucks loaded with de-icing materials inside when possible.

Clean-up/Follow-up

a. Sweep up all spilled de-icing material around loading area.
b. Clean out trucks after snow removal duty in approved washout area.
c. Provide maintenance for vehicles in covered areas.
d. If sand is used in de-icing operations, sweep up residual sand form streets when weather permits.

Documentation

a. Keep plow route map up to date.

2.26. Streets/Storm Drain – Street Sweeping

Activities and Definition

Pollutants collect on surfaces in between storm events as a result of atmospheric deposition, vehicle emissions, winter road maintenance, construction site debris, trash, road wear and tear, and litter from adjacent lawn maintenance (grass clippings). Sweeping of materials such as sand, salt, leaves and debris from city streets, parking lots and sidewalks prevents them from being washed into storm sewers and surface waters. Timing, frequency and critical area targeting greatly influence the effectiveness of sweeping.

Preparation

a. Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading.
b. Restrict street parking prior to and during sweeping using regulations as necessary.
c. Increase sweeping frequency just before the rainy season, unless sweeping occurs continuously throughout the year.
d. Perform preventative maintenance and services on sweepers to increase and maintain their efficiency.

Process

a. Streets are to be swept at a minimum of twice annually, or as needed or specified by the city; Street maps are used to ensure all streets are swept at a specific interval.
b. Drive street sweeper safely and pickup debris.
c. When full take the sweeper to an approved street sweeper cleaning station.

Clean-up/Follow-up

a. Street sweepers are to be cleaned out in an approved street sweeper cleaning station.
b. Street sweeping cleaning stations shall separate the solids from the liquids.
c. Once solids have dried out, haul them to the local landfill.
d. Decant water is to be collected and routed to an approved wastewater collection system area only.
e. Haul all dumped material to the landfill.

Documentation

a. Keep street sweeping route map up to date.

2.27. Streets/Storm Drain – Transporting Soil and Gravel

Activities and Definition

Transportation of materials should be handled with pre-planning and contingency planning.

Preparation

a. Dry out wet materials before transporting.
b. Spray down dusty materials to keep from blowing.
c. Make sure you know and understand the SWPPP requirements for the site you will be working at.
d. Determine the location that the truck and other equipment will be cleaned afterwards.

Process

a. Use a stabilized construction entrance to access or leave the site where materials are being transported to/from.
b. Cover truck bed with a secured tarp before transporting.
c. Follow the SWPPP requirements for the specific site to /from which the materials are being hauled.
d. Make sure not to overfill materials when loading trucks.

Clean-up/Follow-up

a. Use sweeper to clean up any materials tracked out on the roads from site.
b. Washout truck and other equipment when needed in properly designated area.

Documentation

a. NA

2.28. Vehicles – Fueling

Activities and Definition

Fueling of equipment and vehicles should always occur in designated areas when possible. Spill prevention and planning should occur before any fueling takes place.

Preparation

a. Train employees on proper fueling methods and spill cleanup techniques.
b. Install a canopy or roof over aboveground storage tanks and fuel transfer areas.
c. Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on mobile fueling vehicles and shall be disposed of properly after use.

Process

a. Shut off the engine
b. Ensure that the fuel is the proper type of fuel for the vehicle.
c. Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut off to prevent overfill.
d. Fuel vehicle carefully to minimize drips to the ground.
e. Fuel tanks shall not be topped off.
f. Mobile fueling shall be minimized. Whenever practical vehicles and equipment shall be transported to the designated fueling area in the Facilities area.
g. When fueling small equipment from portable containers, fuel in an area away from stormdrains and water bodies.

Clean-up/Follow-up

a. Immediately clean up spills using dry absorbent (e.g. kitty litter, sawdust, etc.) sweep up absorbent material and properly dispose of contaminated clean up materials.
b. Large spills shall be contained as best as possible and the Duty officer and Hazmat team should be notified as soon as possible.

Documentation

a. NA

2.29. Vehicles – Vehicle and Equipment Storage

Activities and Definition

When hazardous material comes into contact with rain or snow, the pollutants are washed into the storm sewer system and, ultimately, to surface water bodies and/or ground water. Hazardous materials have negative impacts on fish habitat, ground water drinking water sources, and recreational uses.

Preparation

a. Inspect parking areas for stains/leaks on a regular basis.
b. Provide drip pans or absorbents for leaking vehicles.

Process

a. Whenever possible, store vehicles inside where floor drains have been connected to sanitary sewer systems.
b. When inside storage is not available, Vehicles and equipment will be parked in the approved designated areas.
c. Maintain vehicles to prevent leaks as much as possible.
d. Address any known leaks or drips as soon as possible. When a leak is detected a drip pan will be placed under the leaking vehicle.
e. The shop will provide a labeled location to empty and store drip pans.
f. Clean up all spills using dry methods.
g. Never store leaking vehicles over a storm drain.

Clean-up/Follow-up

a. Any leaks that are spilled on the asphalt will be cleaned up with dry absorbent; the dry absorbent will be swept up and disposed of in the garbage.
b. The paved surfaces around the building will be swept every two weeks, weather permitting.

Documentation

a. N/A

2.30. Vehicles – Washing

Activities and Definition

MS4 vehicle washing involves the removal of dust and dirt from the exterior of trucks, boats and other vehicles, as well as the cleaning of cargo areas and engines and other mechanical parts. Washing of vehicles and equipment generates oil, grease, sediment and metals in the wash water as well as degreasing solvents, cleaning solutions and detergents used in the cleaning operations.

Preparation

a. Provide wash areas for small vehicles inside the maintenance building that has a drain system which is attached to the sanitary sewer system.
b. Provide wash areas for large vehicles on an approved outside wash pad that has a drain system which is attached to the sanitary sewer system.
c. No vehicle washing will be done where the drain system is connected to the storm sewer system.

Process

a. Minimize water and soap use when washing vehicles inside the shop building.

b. Soap should not be used when washing vehicles outside the shop building.
c. Use hoses with automatic shut off nozzles to minimize water usage.
d. When washing outside the building, it is the operator's responsibility to make sure all wash water is contained on the wash pad and does not have access to the storm drain.
e. Never wash vehicles over a storm drain.

Clean-up/Follow-up

a. Sweep wash areas after every washing to collect what solids can be collected to prevent them from washing down the drain system.
b. Clean solids from the settling pits on an as needed basis.

Documentation

a. N/A

2.31. Water – Planned Waterline Excavation Repair/Replacement

Activities and Definition

Waterline Excavation and repair of an MS4 system can potentially involve activities that could affect the health of the MS4 system. Planning is critical.

Preparation

a. Determine where discharge flow will go.
b. Place inlet protection at nearest downstream storm drain inlets.
c. Clean gutters leading to inlets.
d. Isolate waterline to be worked on.
e. Neutralize any chlorine residual before discharging water.

Process

a. Make efforts to keep water from pipeline from entering the excavation.
b. Direct any discharge to pre-determined area.
c. Backfill and compact excavation.
d. Haul of excavated material or stock pile nearby.

Clean-up/Follow-up

a. Clear gutter /waterway where water flowed.
b. Clean up all areas around excavation.
c. Clean up travel path of trucked material.

Documentation

a. Complete paperwork.

2.32. Water – Unplanned Waterline Excavation Repair/Replacement

Activities and Definition

Waterline Excavation and repair of an MS4 system can potentially involve activities that could affect the health of the MS4 system. Unplanned excavations can be additionally tricky and pre-planning is critical.

Preparation

a. Make sure service trucks have wattles, gravel bags, or other materials for inlet protection.

Process

a. Slow the discharge.
b. Inspect flow path of discharge water.
c. Protect water inlet areas.
d. Follow planned repair procedures.
e. Haul off spoils of excavation.
f. Consider use of silt filter bags on pumps.

Clean-up/Follow-up

a. Repair eroded areas as needed.
b. Follow planned repair procedures.
c. Clean up the travel path of trucked excavated material.

Documentation

a. NA

2.33. Water – Transporting Dry Excavated Materials and Spoils

Activities and Definition

Transportation of materials should be handled with pre-planning and contingency planning.

Preparation

a. Utilize truck with proper containment of materials.

b. Determine disposal site of excavated materials.

Process

a. Load
b. Check truck after loading for possible spillage.
c. Transport in manner to eliminate spillage and tracking.
d. Utilize one route for transporting.

Clean-up/Follow-up

a. Clean loading area.
b. Clean transporting route.
c. Wash off truck and other equipment in a designated equipment cleaning area.

Documentation

a. NA

2.34. Water – Transporting Wet Excavated Materials & Spoils

Activities and Definition

Transportation of materials should be handled with pre-planning and contingency planning.

Preparation

a. Utilize truck with containment for material.
b. Determine disposal site of excavated material.

Process

a. Load and Transport in manner to minimize spillage & tracking of material.
b. Check truck for spillage.
c. Utilize one route of transport.

Clean-up/Follow-up

a. Clean route of transport to provide cleaning of any spilled material.
b. Washout equipment truck and other equipment in designated wash area.

Documentation

a. NA

2.35. Water – Waterline Flushing for Routine Maintenance

Activities and Definition

Flushing is a process that rapidly removes water from the city's water piping system. Flushing uses water force to scour out materials that accumulate in the city's pipes. Water pipes are usually flushed by opening fire hydrants, where the discharged water flows off the streets the same as rainwater.

Preparation

a. Determine flow path of discharge to inlet of waterway.
b. Determine chlorine residual.
c. Neutralize chlorine residual.

Process

a. Clean flow path.
b. Protect inlet structures.
c. Use diffuser to dissipate pressure to reduce erosion possibilities.

Clean-up/Follow-up

a. Clean flow path.
b. Remove inlet protection

Documentation

a. NA

2.36. Water – Waterline Flushing after Construction/System Disinfection with Discharge to Storm Drain.

Activities and Definition

Flushing is a process that rapidly removes water from the city's water piping system. Flushing uses water force to scour out materials that accumulate in the city's pipes. Water pipes are usually flushed by opening fire hydrants, where the discharged water flows off the streets the same as rainwater.

Preparation

a. Determine chlorine content of discharge water, and select de-chlorination equipment to be used.
b. Determine flow path of discharge.

Process

a. Protect inlets in flow path.
b. Install de-chlorination equipment.
c. Sweep and clean flow path.
d. Use diffuser to reduce velocities.

Clean-up/Follow-up

a. Pick up inlet protection.
b. Clean flow paths.
c. Remove equipment from flush point.

Documentation

a. NA

2.37. Water – Chemical Handling/Transporting and Spill Release

Activities and Definition

Hotspot facilities are facilities that produce higher levels of stormwater pollutants and/or present a higher potential risk for spills, leaks or illicit discharges. Hazardous material storage and handling is of particular concern in these areas.

Preparation

a. Understand MSD sheets for handling of product.
b. Determine proper place of handling.
c. Have necessary containment and spill kits at handling place.

Process

a. Begin transfer process.
b. Discontinue operations if a spill level occurs.
c. Disconnect and store handling equipment.

Clean-up/Follow-up

a. Clean up spills with proper material.
b. Dispose of contaminated material at appropriate facility.

Documentation

a. Report spills to duty officer.

APPENDIX A
Facility Inventory

City of Alexandria
Facility Inventory

Facility	Location
Bunker of salt	Alexandria Street Department
Bunker of sand	Alexandria Street Department
Bunker of cold patch	Alexandria Street Department
Bunker of riprap	Alexandria Street Department
Bunker of gravel	Alexandria Street Department
Bunker of black dirt	Alexandria Street Department
Bunker of wood chips	Alexandria Street Department
Bunker of wood blocks	Alexandria Street Department
Dumpster for steel	Alexandria Street Department
Dumpster for cardboard	Alexandria Street Department
Dumpsters for garbage (2)	Alexandria Street Department
Waste oil barrel (500 gal)	Alexandria Street Department
Parking lot – Public	Between 5th & 6th on Fillmore
Parking lot – Public	Between 5th & 6th on Hawthorne
Parking lot – Public	Between Broadway & Hawthorne on 7th
Parking lot – City Hall	Between Fillmore & Broadway on 7th
Parking lot – Downtown Liquor	214 Broadway Street
Parking lot – Plaza Discount Liquors	400 34th Avenue West
Parking lot – Alex Police Dept.	501 3rd Avenue West
Parking lot – Alex Fire Dept.	302 Fillmore Street
Agnes Park	Agnes Blvd
Big Ole Park	2nd Ave E. & Broadway
Blue Bird Park	Curt Felt Drive
Carter Park	County Rd. #22
City Park	118 City Park Road
Dean Melton/Fillmore Park	1510 Fillmore Street
Fred Foslien Park	Victoria Drive
Geneva Crest Park	Geneva Drive
Goose Park	5th Avenue West
Knute Nelson Ball Park	303 5th Avenue West
Lake Connie Corner	7th Avenue E & Temple Street
Lake Connie Park/Pooch Playland – Dog Park	9th & Victor Street
Lake Burgen Park	Snowbird Lane SE
Lakeview Park	Lakepark Place
Legion Park	8th & Broadway
Manor Hills Park	2304 Springdale
Martin's Hope Park	2nd Avenue E & Hawthorne Street
Noonan Park	10th & Nokomis
Oak Knoll Park	1709 Oak Knoll Drive
Oakwood Trails	Woodland Park Drive NE
Runestone Park	Hwy #27 E & 6th Avenue E
Summer Meadows Park	Scenic Heights Drive
Skylark Park	Amanda Lane
Woodland Park	50th Avenue E

APPENDIX B
Inspection Forms

City of Alexandria
Pond & Structural Stormwater BMP
Inspection Form

Pond ID:	**Completed By:**
Address/Nearby Landmark:	**Signature:**
Date:	**Late Rain Date:** **Amount:** (inches)
Facility Type: ☐**Pond** ☐**Structural Stormwater BMP:** _____	

Illicit Discharge Evaluation

Activities	Yes√	No √	NA √	Comments
Odor to discharge?				
Color to discharge?				
Floatables in discharge (ex: trash)?				
Stains/Deposits in or on structure?				

Additional Comments:

Functional Evaluation
(0 – acceptable, 1 – item needs maintenance, 2 – immediate repair)

Overall Stabilization Condition	RATE: 0 / 1 / 2
Overall Structural Condition	RATE: 0 / 1 / 2
Flow Description (at time of inspection)	☐NONE ☐ TRICKLE ☐MODERATE ☐SUBSTANTIAL
Approximate Depth of Flow	DEPTH: _____ (inches)
Visible Sediment Delta Forming?	☐YES ☐NO
Amount of Sediment Build-up	RATE: 0 / 1 / 2

Additional Comments:

Erosion

Activities	Yes√	No √	NA √	Comments
Is vegetation on side slopes failing?				
Any signs of erosion?				

Additional Comments:

Inflow/Outflow Structures

Activities	Yes√	No √	NA √	Comments
Any signs of erosion?				
Any signs of structure settling?				
Any signs of physical damage?				
Any signs of accumulated sediment in the inlet/outlet?				
Any signs of accumulated debris, trash, etc.				
If *YES* to any of the above, schedule for maintenance.				
Any debris present?				
If *YES*, remove debris or schedule for maintenance.				

Additional Comments:

City of Alexandria
Outfall Inspection Form

General Information:

Outfall ID #_____ | Inspected by: | Date: _____

Last Rain Date (if known):_____ Amount:_____ (inches)
Today's Rainfall Amount: _____ (inches)

Address/Nearby Landmark: _____

Weather Conditions: ☐Clear Skies ☐ Overcast ☐ Other: _____

Photos taken? ☐Yes ☐No

Outfall Data:

Outfall Type:
- ☐Manhole
- ☐Flared End
- ☐Swale
- ☐Weir
- ☐Flume
- ☐Culvert
- ☐Other

Outfall Condition:
- ☐Clear/Functioning
- ☐Needs Maintenance/Cleaning
- ☐Needs Repair
- ☐Needs Replacement

Immediate Action Needed? ☐Yes ☐No

Other Notes: _____-

Discharge Data:

Visible Flow? ☐Yes ☐No ☐Submerged

Flow Depth: _____(approx. inches)

Significant erosion and/or sedimentation? ☐Yes ☐No

If flow is present, describe and check all that apply:
- ☐Colored Water _____
- ☐Odor _____
- ☐Murky, Turbid _____
- ☐Floating objects _____
- ☐Scum _____
- ☐Oily Sheen _____
- ☐Sludge Present _____
- ☐Clear _____
- ☐Suds _____

Illicit Discharge Details:

☐Follow-up Required	Yes / No	_____
☐IDDE Source Identified	Yes / No	_____
☐Responsible Party Name		_____
☐Potential Pollutants?	Yes / No	_____
☐Enforcement Response Followed	Yes / No	_____
☐≥ 72 hours since last rainfall	Yes / No	
☐Sample Collected?	Yes / No	
☐Photos taken?	Yes / No	
☐Corrective Action Required?	Yes / No	

Additional Information:

Comments / Corrective Action Conducted:

City of Alexandria
Facility and Stockpile Inspection Form

Facility ID:	Location:
Completed by:	Signature:
Date:	Date of previous inspection:

Activities	Yes√	No √	NA √	Comments
Good Housekeeping				
Outdoor work areas and storage areas are neat and tidy.				
Access roads and parking lots are inspected for excess dirt, debris, and oil drips and are cleaned as necessary.				
General Practices				
A map of the property is available identifying the direction of stormwater flow and the location of storm drains.				
Storm drains are free of debris and stains of oil and chemicals.				
Nearby water bodies (streams, ponds, etc.) and drainage ditches are free of trash, oily sheen, foam, etc. that may be coming from the facility.				
Materials found in nearby waterbodies and drainage ditches are cleaned up.				
Landscape Maintenance				
Landscape waste and materials (i.e., grass clippings, compost, mulch) are stored in a covered, bermed, or contained area.				
Piles of mulch, compost, or yard waste are not kept next to streams, channels, or storm drain inlets.				
Grass clippings are left on the grass after mowing.				
Clippings and debris are swept off sidewalks/pavement after mowing.				
No pesticides/herbicides are sprayed near surface waters, creeks, ditches, or storm drains.				
Spot spraying is performed for weed and insect control (broadcast spraying is avoided).				
Building Maintenance				
Surface or pressure washing wastewater is directed to nearby landscaping or is allowed to evaporate if no chemicals or detergents are used and only ambient dirt is being cleaned.				
Wastewater is sent to the sanitary sewer system when chemicals or soap are being used or if materials other than ambient dirt are being cleaned from the pavement.				
Dry clean-up methods are used before pressure washing is performed (including using absorbents to clean up spills, sweeping, vacuuming, and scraping off dried debris) and debris is disposed of properly.				
Material Storage				
Materials that are potential stormwater contaminants (see Page 1) are stored under cover or in appropriately sized secondary containment.				
Materials are not loaded or unloaded near storm drain inlets or drainage ditches or over unpaved surfaces unless drains are protected.				
Unused materials are kept in original containers which are labeled to identify contents.				
Materials are not stored next to waterbodies (streams,				

drainage channels, etc.).				
Sand is stored under cover or in bermed location.				
Salt is stored under cover.				
55-gallon drums, bulk storage tanks, or other containers stored outside are specifically designed for outdoor storage.				
Secondary Containment				
The structure of secondary containment is sound.				
Water in secondary containment structures is inspected for contaminants and drained as needed.				
Contaminants and contaminated water in secondary containment is drained to the sanitary sewer or other appropriate facility.				
Equipment Storage				
Equipment is stored under cover when possible.				
Any spills and leaks from equipment are cleaned up promptly.				
Preventative maintenance is routinely performed on equipment to prevent leaks.				
Vehicle and Equipment Fueling				
Signs are present at fueling stations that prohibit "topping off" and describe spill procedures.				
Drips and leaks are spot cleaned promptly and absorbent is collected and disposed of properly.				
Fueling equipment/tanks are properly maintained and labeled (i.e., overflow protection devices, automatic shut-off valves, etc.)				
Vehicle and Equipment Maintenance				
Vehicle maintenance activities are conducted in specified area not exposed to stormwater.				
If vehicle/equipment maintenance is performed outside drip pans are placed under places where spills can occur (i.e., hose connections, filler nozzles, etc.)				
Leaking vehicles are reported to fleet maintenance.				
Vehicle and Equipment Washing				
Washwater is directed to nearby landscaping or is allowed to evaporate if no chemicals or detergents are used and only ambient dirt is being cleaned.				
Washwater is sent to the sanitary sewer system when chemicals or soap are being used or if materials other than ambient dirt are being cleaned from the pavement.				
Waste Management				
Waste is properly disposed of.				
Dumpsters or outdoor trash containers are covered at all times unless in use.				
Hazardous Waste Management				
Hazardous materials are properly labeled to identify material.				
Hazardous materials are stored to prevent exposure to stormwater runoff.				
Spill Cleanup and Prevention				
The facility has a spill response plan that is readily accessible.				
Fueling stations/islands have spill kits with absorbents immediately accessible.				
Spill kits are complete and restocked.				
Spills are cleaned up promptly.				
All employees know where spill kits are located.				
Employees are trained in proper spill containment and cleanup.				
Phone numbers and contact information for spill reporting is readily available.				

APPENDIX C
Pond Inventory

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

MS4 Pond, Wetland, and Lake Inventory Form

Municipal Separate Storm Sewer System (MS4) Program

Doc Type: Plans/Specifications/Maps

Name of MS4 Permittee	Date form completed	Unique ID Number	Type of Feature (Pond, Wetland or Lake)	Feature Common Name (If Applicable)	Y Coordinate (Latitude) Decimal Degrees	X Coordinate (Longitude) Decimal Degrees
City of Alexandria	11/3/2014	P01	Pond	Wildflower	45.91087392	-95.35109735
City of Alexandria	11/3/2014	P02	Pond	Summer Lane	45.90790066	-95.36205645
City of Alexandria	11/3/2014	P03	Pond	Wil-O-B Lane	45.90156436	-95.35636160
City of Alexandria	11/3/2014	P04	Pond	Trails Addition	45.90149861	-95.40254940
City of Alexandria	11/3/2014	P05	Pond	Trails Addition	45.90183611	-95.40139937
City of Alexandria	11/3/2014	P06	Pond	Rodeo Drive	45.89238416	-95.34855862
City of Alexandria	11/3/2014	P07	Pond	Lakeview Park N Pond	45.89270171	-95.34526738
City of Alexandria	11/3/2014	P08	Pond	Lakeview Park S Pond	45.88946045	-95.34693245
City of Alexandria	11/3/2014	P09	Pond	Birch Avenue N Pond	45.89063578	-95.33989422
City of Alexandria	11/3/2014	P10	Pond	Birch Avenue S Pond	45.88771353	-95.34073122
City of Alexandria	11/3/2014	P11.1	Pond	Depot S Pond	45.89087869	-95.37897115
City of Alexandria	11/3/2014	P11.2	Pond	Depot N Pond	45.89122704	-95.37885922
City of Alexandria	11/3/2014	P12.1	Pond	Kenwood S Pond	45.89109594	-95.37243524
City of Alexandria	11/3/2014	P12.2	Pond	Kenwood Mid Pond	45.89135466	-95.37170428
City of Alexandria	11/3/2014	P12.3	Pond	Kenwood N Pond	45.89172949	-95.37088970
City of Alexandria	11/3/2014	P13	Pond	Woodsmen	45.88951984	-95.35831725
City of Alexandria	11/3/2014	P14	Pond	Fosline Park	45.88185581	-95.33990890
City of Alexandria	11/3/2014	P15	Pond	SW Storm Sewer Pond	45.87440237	-95.39181221
City of Alexandria	11/3/2014	P16	Pond	Rosewood Lane	45.87075044	-95.35011785
City of Alexandria	11/3/2014	P17	Pond	N of Alex Clinic	45.86444409	-95.38452079
City of Alexandria	11/3/2014	P18	Pond	Burgan Sunrise N Pond	45.85083792	-95.34957154
City of Alexandria	11/3/2014	P19	Pond	Burgan Snrs Mid Pond	45.84939384	-95.34922324
City of Alexandria	11/3/2014	P20	Pond	Burgan Sunrise S Pond	45.84834368	-95.34850022
City of Alexandria	11/3/2014	P21	Pond	Industrial Park	45.85164065	-95.39640256
City of Alexandria	11/3/2014	P22	Pond	Industrial Park	45.85056512	-95.39630381
City of Alexandria	11/3/2014	P23	Pond	Industrial Park	45.85016325	-95.39459298
City of Alexandria	11/3/2014	P24	Pond	Industrial Park	45.84835255	-95.39975166
City of Alexandria	11/3/2014	L01	Lake	Henry	45.90215718	-95.37623280
City of Alexandria	11/3/2014	L02	Lake	Agnes	45.89443041	-95.37450627
City of Alexandria	11/3/2014	L03.1	Lake	Winona	45.88950911	-95.38385162
City of Alexandria	11/3/2014	L03.2	Lake	Winona	45.87816471	-95.39896507
City of Alexandria	11/3/2014	1114421	Wetland		45.84776964	-95.42472028
City of Alexandria	11/3/2014	1114425	Wetland		45.84286059	-95.42678043
City of Alexandria	11/3/2014	1114429	Wetland		45.83293935	-95.42699272

City of Alexandria
Pond Sediment Removal Form & Routine Maintenance Form

Pond ID #:	Date:
Individuals providing maintenance/cleaning:	
Volume of sediment removed (cy): If less than 100 cubic yards, perform routine pond maintenance. If 100+ cubic yards, complete laboratory testing of sediment removed and attach results.	
Location of final disposal of sediment/trash:	
Notes (including type/amount of debris/trash removed, observations/maintenance comments):	
Contractor information: (if available)	

**Pond as-built plans attached, if available

Summary of Stormwater Pond Sediment Testing Results (Revised 7-2-2012 "Stormwater Sediment" spreadsheet only)

Project Name:

Sample Date:

Parameters	Insert Reporting Limit*	Residential SRV Values	Industrial SRV Values	Sample Locations and Depths: Core Location #1 mg/kg		Core Location #2 mg/kg		Core Location #3 mg/kg	
		mg/kg	mg/kg						
Metals	mg/kg								
Arsenic		9	20						
Copper		100	9000						
Noncarcinogenic PAHs	mg/kg								
Acenapthene		1,200	5,260						
Acenapthylene		na	na						
Anthracene		7,880	45,400						
Benzo(g,h,i)perlyene		na	na						
Fluoranthene		1,080	6,800						
Fluorene		850	4,120						
2-Methylnapthalene		100	369						
Naphthalene		10	28						
Phenanthrene		na	na						
Pyrene		890	5,800						
Quinoline**		4	7						
Carcinogenic PAHs & Total B[a]P Equivalents	Insert Reporting Limit* mg/kg	Potency Equiv. Factor (PEF)		Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.	Site Conc.	BaP Equiv.
Benz[a]anthracene		0.10			0.000		0.000		0.000
Benzo[b]fluoranthene		0.10			0.000		0.000		0.000
Benzo[j]flouranthene		0.10			0.000		0.000		0.000
Benzo[k]fluoranthene		0.10			0.000		0.000		0.000
Benzo[a]pyrene		1.00			0.000		0.000		0.000
Chrysene		0.01			0.000		0.000		0.000
Dibenz[a,h]acridine		0.10			0.000		0.000		0.000
Dibenz[a,h]anthracene		0.56			0.000		0.000		0.000
7H-Dibenzo[c,g]carbazole		1.00			0.000		0.000		0.000
Dibenzo[a,e]pyrene		1.00			0.000		0.000		0.000
Dibenzo[a,h]pyrene		10.00			0.000		0.000		0.000
Dibenzo[a,i]pyrene		10.00			0.000		0.000		0.000
Dibenzo[a,l]pyrene		10.00			0.000		0.000		0.000
7,12 Dimethylbenz-anthracene		34.00			0.000		0.000		0.000
Indeno[1,2,3,-c,d]pyrene		0.10			0.000		0.000		0.000
3-Methylcholanthrene		3.00			0.000		0.000		0.000
5-Methylchrysene		1.00			0.000		0.000		0.000
Total B[a]P Equivalent* (mg/kg)**		2	3		0.000		0.000		0.000

Residential SRV (suitable for residential land use)

Industrial SRV (suitable for industrial land use)

Highlight value for "J" flagged data - sample concentration is above Method Detection Level but is below Reporting Limit

SRV = soil reference value

PAHs = polycyclic aromatic hydrocarbons

na = not available, there is no SRV available for this contaminant at this time.

B[a]P = benzo[a]pyrene

*** Reporting Limits**- insert reporting limits in this column from the lab analytical results reports (converting to mg/kg if necessary)

**** Quinloine** is a carcinogenic PAH that does not have a PEF value. Therefore, it is not included in the B[a]P equivalent calculation. It is included in the noncarcinogenic PAH section and evaluated separately.

***** B[a]P Equivalent** - Each contaminant sample concentration is multiplied by it's Potency Equivalency Factor (PEF) to obtain a B[a]P equivalent concentration. All B[a]P equivalent concentrations are summed to calculate the total B[a]P equivalent concentration. For nondetect data, use the procedures outlined in Appendix B of "Managing Stormwater Sediment BMP Guidance For Municipalities".

APPENDIX D
MPCA Sediment Removal Guidance

Managing Stormwater Sediment Best Management Practice Guidance

Minnesota Pollution Control Agency

June 2015

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This report is available in alternative formats upon request, and online at www.pca.state.mn.us.

Document number: wq-strm4-16

Table of Contents

Stormwater Sediment Best Management Practices

What's New?

- Land use category definitions have been revised.
- Minor changes have been made to the "Stormwater Sediment Spreadsheet" to make the spreadsheet easier to use when calculating benzo[a]pyrene (B[a]P) equivalents and comparing contaminant concentrations in stormwater sediment to soil reference values.
- Sediment sampling is required regardless of the volume of sediment to be excavated.
- General information about hydraulic dredging has been added.

This document provides guidance for stormwater collection and conveyance systems which have been designed, constructed, operated, and maintained for the purpose of providing treatment of stormwater. Stormwater collection and conveyance systems help protect infrastructure from flooding and they collect and concentrate pollutants to prevent them from reaching lakes, rivers, streams, wetlands, and other waters of the state where they could have a negative effect on water quality, aquatic animals, or human health. Managing contamination and pollutants in stormwater collection and conveyance systems should be expected and sampling is required prior to disposal, or beneficial use (e.g. fill, topsoil, or compost) to determine proper management.

This guidance document will help you think through important steps associated with sediment removal projects. These may include:

- Who is responsible for managing stormwater sediment
- Land use within a drainage area
- Sampling sediment and what laboratory analysis is required
- How to calculate BaP equivalents for carcinogenic polycyclic aromatic hydrocarbons (cPAHs)
- Management requirements for contaminated sediment;
- Where contaminated stormwater sediments are accepted for disposal

This document is intended to help those responsible for operation and maintenance of stormwater systems determine when sediment removal is needed, and what steps to consider during the course of managing a sediment removal project. This is guidance. It is not a comprehensive list of everything you may need to do when managing a sediment removal project.

Other considerations may also include:

- Proximity to high value resources or sensitive ecological features
- Landscape variations, and soil types
- Management of native or invasive species
- A wide range of other variables that may be encountered from one municipality to the next, or one project to the next

This guidance was developed with special assistance from the cities of Burnsville, Circle Pines, Maplewood, Roseville, St. Paul, White Bear Lake, and Woodbury, Minnesota.

Background

Action was taken during the 2009 Minnesota Legislative session which included funding to conduct research on stormwater pond sediment contamination and to help Minnesota cities clean-out contaminated stormwater ponds. (House File Number 1231 Passed by the Minnesota Legislature on May 18, 2009 and approved by Governor Tim Pawlenty on May 22, 2009.)

Research concluded that polycyclic aromatic hydrocarbons (PAHs) are often responsible for the greatest contamination problems in stormwater pond sediment (Crane et al. 2010). Research conducted on stormwater pond sediments in the Minneapolis-St. Paul, Minnesota metropolitan area showed that PAHs are the primary contaminants of concern affecting disposal decisions (Polta et al. 2006; Crane et al. 2010). PAHs persist in the environment and pose a risk to animals, plants, and people at elevated concentrations. These contaminants are formed by the incomplete combustion of organic materials, such as wood, oil, and coal, as well as occurring naturally in crude oil and coal (Crane et al. 2010).

Coal tar-based sealants are a major source of PAHs in urban sediments where these products are used in the surrounding watershed (Mahler et al. 2012). The Minnesota Pollution Control Agency's (MPCA) research (Crane 2014) determined that coal tar-based sealants were the most important source of PAHs (67.1%), followed by vehicle emissions (cars and trucks) (29.5%) and pine wood combustion (3.4%).

The Legislation also provided funding for municipalities who pass ordinances banning or restricting the use of coal tar-based sealants. Twenty-nine municipalities passed such ordinances before legislation in the spring of 2013 banned coal tar-based sealants state wide effective January 1, 2014 (Minnesota Statutes section 116.202).

The 2009 Legislation also directed the MPCA to develop stormwater best management practices (BMPs) to avoid or mitigate impacts of PAH contamination from coal tar-based sealants. The MPCA provides guidance for the operation and maintenance of constructed stormwater collection systems. BMPs can be found in the Minnesota Stormwater Manual at this location http://stormwater.pca.state.mn.us/index.php/Main_Page.

Stormwater collection and conveyance systems are commonly referred to as stormwater ponds, stormwater control devices, wet detention basins, or National Urban Runoff Program (NURP) ponds.

This document provides guidance for sediment removal projects from stormwater ponds that have been designed, constructed, operated and maintained for the purpose of providing treatment of stormwater.

Sediment removal from lakes, rivers, streams, and wetlands may be subject to additional requirements such as a permit from the Department of Natural Resources (DNR) to allow work below the ordinary high water level. Permit determinations are guided by DNR hydrologists based on geographical location. A list of DNR hydrologists by area is available on the DNR web site at http://files.dnr.state.mn.us/waters/area_hydros.pdf.

Sediment may also be generated in other stormwater collection devices such as rain gardens, infiltration swales, sumps, traps, pipes, and/or other conveyance structures. This guidance may be adapted for other situations to determine representative contaminant concentrations. The analytical component outlined in Appendix A may be applied to other sediment sampling situations, but the MPCA does not have specific sampling guidance at this time for those situations and it is not necessary to follow this guidance for other types of sediment removal projects. The sampling guidance provided in Appendix A is strictly for sampling sediment from stormwater ponds that have been designed, constructed, operated, and maintained for the purpose of providing treatment of stormwater.

Sediment disposal costs

The high cost to manage contaminated stormwater sediment has brought operation and maintenance of stormwater ponds into the public spotlight. Unregulated sediment is characterized as sediment that does not have contamination exceeding the residential soil reference values. Unregulated sediment may be managed locally and without disposal restrictions. Disposal costs for stormwater sediment removal projects with contamination exceeding the industrial soil reference values is regulated as a solid waste and the cost for disposal can be as much as three times more expensive than unregulated sediment depending on the type and level of contamination. The high cost to manage contaminated sediment emphasizes the importance of source control to reduce the loading of contamination into stormwater ponds.

Sediment removal process

Inventory and maintenance needs.

Evaluating and testing sediment.

Engineering, contracting, and work plans.

Excavating sediment.

Site restoration.

Records and documentation to keep on file.

1. Inventory and maintenance needs

Assessing need and planning sediment removal projects includes a number of steps that range from estimating lost capacity to notifying neighbors about plans to maintain the stormwater collection system. For municipalities who are managing dozens, or sometimes hundreds of stormwater ponds, starting with an inventory and a maintenance prioritization process is recommended.

Some municipalities find it helpful to develop a flowchart or other prioritization scheme to triage and track priority sediment removal projects. Topics of importance may include:

- Have priorities been identified by city inspections – sediment level, lost capacity, other needs?
- Accessibility. Does the city already have access via parkland, easement, or outlot? Are there access points for machinery and trucks?
- What are the sediment analysis results? Can the city afford to remove and manage the sediment?
- Is the downstream lake or sub-watershed a priority?
- What is the expected cost/benefit from the project?
- Can a stormwater pond be expanded, or redesigned to provide greater benefit?
- Is surveying needed to assess lost capacity and depth of excavation?
- How will you measure or estimate the volume of cubic yards of sediment to be removed?
- Have sediment deltas and inlet/outlet structures been identified/located?
- Are communications with other stakeholders important/public relations?
- Are visual inspections, notes, checklists, or photos to track maintenance projects needed?

The first phase of work identifies need and determines if a sediment removal project is even necessary. This may include a preliminary survey to gage sediment depth and provide a rough

estimate of the number of cubic yards of sediment to be removed. This assessment and planning will help guide work plan development and contracting if a sediment removal project is deemed necessary.

2. Evaluating and testing sediment

Sediment samples are collected and compared to MPCA's Remediation Division soil reference values (SRVs) to determine where excavated sediment may be beneficially used or disposed. This affects work plan development, including contract specifications for bidding projects and is an important part of the management process.

- Guidance for *collecting samples and testing sediment* are summarized in Appendix A.
- Guidance *comparing contaminant analytical data (concentrations) to SRVs and* calculating *B[a]P equivalents* are summarized in Appendix B.

There are two sets of SRVs based on the following Remediation soil land use categories:

Residential land includes lawn surrounding single family housing and newly developed single family residences, multi-family housing, condominiums, playgrounds, sports fields, beaches, produce gardens, long-term care facilities, correctional housing, hospitals, campgrounds, child care centers, churches, schools, wildlife areas, local/state/national forests, and public or private erodible trails are included in this category.

Industrial land includes lawns, yards, and landscaping that surround hotels, office buildings, retail stores, shopping centers, and restaurants and industrial property, public utility facilities, rail and freight facilities, storage facilities, warehouses, office buildings and manufacturing facilities.

The analytical results and calculation of B[a]P equivalents are compared to the MPCA's Remediation Divisions SRV values to determine management or treatment options.

Management options include:

Use of excavated sediment as unregulated fill. Contaminant concentrations from the list of analytes, including cPAHs expressed as B[a]P equivalents and any other site-specific contaminants are all below the Residential SRVs. The excavated sediment is unregulated fill and does not require any special management.

Determination of excavated soil as regulated solid waste. One or more of the required list of analytes, including cPAHs expressed as B[a]P equivalents and any other site-specific contaminants exceed the Residential SRVs but do not exceed the Industrial SRVs. The excavated sediment requires special management and cannot be used as unregulated fill. Excavated sediment can be managed in accordance with the MPCA's BMPs for the Off-Site Use of Unregulated Fill available at: http://www.pca.state.mn.us/index.php/view-document.html?gid=13503.

Excavated sediment that is not considered unregulated fill is most commonly guided to a solid waste landfill. Depending on the types and concentrations of contaminants; sediment may need to be disposed of at a Municipal Solid Waste (MSW) landfill that has an industrial solid waste management plan. This means contaminated sediment must go to a MSW landfill that has a liner and a leachate collection system.

MSW landfills in Minnesota that can accept contaminated sediment are listed at this webpage:

http://www.pca.state.mn.us/veiz806 or, the list can be accessed directly at this link: http://www.pca.state.mn.us/index.php/view-document.html?gid=12806.

Some additional landfills that are permitted to accept industrial waste, and which may also accept contaminated stormwater sediments, include:

1. Voyageur Industrial Landfill in Cannon Falls, Minnesota
2. Vonco II Landfill in Becker, Minnesota
3. Vonco V Landfill in Duluth, Minnesota
4. Shamrock Environmental Landfill in Cloquet, Minnesota
5. Dem-Con Landfill in Shakopee, Minnesota
6. Veolia E S Rolling Hills Landfill in Buffalo, Minnesota
7. SKB Rosemount Industrial Waste Facility in Rosemount, Minnesota

Guidance for analytical data comparing contaminants to SRVs and calculating B[a]P equivalents are summarized in Appendix B. At this time testing sediment for metals other than copper and arsenic is not required. However, contractors who remove and/or transport sediment, or facilities that beneficially re-use or dispose of sediment may require test results for heavy metal concentrations. This may be an important variable as sediment removal projects are planned and samples are collected and compared. It is recommended that you consult with contractors and contact disposal or re-use facilities to ensure they will be able to accept your waste and to determine what additional sampling requirements (if any) may be required by the facility.

3. Engineering, contracting, and work plans

Work plan development includes a wide range of logistics including, but not limited to:

- Notification of residents and neighbors;
- How to access the site and what machinery will be needed to remove sediment.
- Define how sediment will be removed, measured, and paid for.
- Testing or analysis requirements for the destination disposal or treatment facility.
- Plans for erosion control.
- Tree removal, environmental impact, depth to ground water, and risks associated with the displacement of wildlife or invasive species.
- Lack of design and/or construction documentation (no "as-built" records).
- Estimating water draw-down needs and the amount of time and oversight needed to drain the stormwater collection system.
- What permits (if any) may be required by your local watershed district, county, or the MDNR. The MPCA does not require a permit or notification for routine maintenance of stormwater ponds, but cities are advised to keep records and documentation of their sediment removal projects as outlined in this guidance and as required by the Municipal Separate Storm Sewer Systems (MS4) Permit.
- Defining appropriate BMPs for dewatering (e.g., rock riprap, sand bags, plastic sheeting, or other accepted energy dissipation measures), such that the discharge does not adversely affect the receiving water or downstream landowners.
- Ensuring that water from pumping or draw-down activities is discharged in a manner that does not cause nuisance conditions, erosion in receiving channels, or erosion on down-slope properties. This also includes inundation of wetlands causing significant and/or adverse impact. The general rule of thumb is "keep it clear".
- How sediment will be transported and a process to track the volume of sediment removed.

- Defining logistics, administrative, and engineering requirements, surveys, dewatering processes, site access and easements, rock entrance and off-site tracking needs, coordination with adjacent cities, and/or watershed districts and the Minnesota Department of Transportation.

4. Excavating sediment

Sediment excavation projects can take place during the winter or summer.

Benefits to sediment removal projects in the winter include:

- Winter excavations greatly reduce the risk that rain may cause flooding and erosion of dewatered ponds, or turbid runoff conditions.
- Access with trucks and heavy machinery is easier in the winter when soil surrounding stormwater ponds freezes solid.
- Adjacent residents and neighbors have windows closed and this means less noise, less dust, less odor, and fewer disturbances overall.
- Water can be pumped down so remaining water can freeze solid. Pumping should be discontinued before the bottom of the pond is disturbed and sediment is stirred up making the water turbid. Remaining water should be allowed to freeze solid trapping any suspended sediment in ice. The ice can then be skimmed off with a bulldozer so it can be piled within the pond. This keeps turbid water in the basin after snow and ice melt during spring thaw.

Winter excavation projects also have a few drawbacks. They include:

- Shorter working days
- Problems associated with working in freezing conditions and sub-zero weather
- The use of lights after dark to extend the work day

Sediment removal can begin once snow and ice have been skimmed off and piled within the pond.

Once sediment is removed, final grading should achieve a natural (gradual) slope for all banks. Ice and snow that has been stockpiled in the pond should be evenly distributed throughout the basin once sediment has been removed. This will allow water and remaining sediment to be retained in the pond. Temporary stabilization of slopes and banks should ensure control of erosion and prevent site run-off during spring snowmelt and the first rain events of the season. Clean-up and removal of temporary infrastructure should be done working your way out of the site. Once equipment and temporary infrastructure (such as transport roads and rock entrances) is removed, it will be cost prohibitive and essentially impossible to make additional corrections.

Summer excavations include the risk of unexpected rain fall events that can complicate a conventional sediment removal project and sometimes delay the project for days and increase the risk to receiving waters down-stream. Small projects (less than one acre) may be completed in one day or less and risks associated with unexpected rain fall events can be minimized or avoided altogether. Small projects don't require a permit, but safeguards and best management practices are still required to ensure negative down-stream impacts to receiving waters are prevented. Large projects that will disturb one or more acres upland are required to have a Construction Stormwater Permit to ensure best management practices are implemented as the scale of the project and potential risks to receiving waters increase.

One method of sediment removal that can be used during the summer months is called hydraulic dredging. This process utilizes a watercraft or floating dredging device with a large centrifugal pump to remove sediment. Saturated mud and sand (often referred to as muck) is removed from

the stormwater pond and discharged into a large filter bag (or series of bags) upland. This process may allow sediment to be pumped hundreds and sometimes thousands of feet away from the pond depending on site conditions. Water that drains from the filter bag is channeled to a secondary treatment system with a flocculent that provides additional filtration before the water is returned to the stormwater pond. Benefits to hydraulic dredging include:

- Allows work to be performed during warm weather conditions.
- May be better suited for sites that are difficult to access with large trucks or large machinery.
- In many cases it will result in less disturbance for neighbors as the dredging operation is generally more quiet than operating various types of heavy machinery.
- Impacts to reptiles (turtles) and amphibians (frogs) may be less as they are not hibernating in the sediment and are able to move away from the slow moving dredge.
- Filter bags and treatment of the water that drains from them reduce fugitive dust and provide a secure way to store sediment while the sediment dries out.
- No need to bypass flows in the watershed which can be difficult if the watershed draining to the pond is large.
- Hydraulic dredging can take place even when there are significant groundwater inputs to the pond.
- Scheduling and costs are typically more predictable and are not likely to vary as they might with conventional excavation methods.
- Hydraulic dredging has a longer working season. Sediment removals via hydraulic dredging can be performed roughly eight months of the year depending on site conditions and seasonal variations from year to year.
- Hydraulic dredging projects are not impacted by rainfall and can continue operations during rainfall if desired.

Hydraulic dredging projects also have a few drawbacks. They include:

- Segregating specific areas of the pond by contaminate levels may be difficult or impossible.
- The necessary area needed for dewatering and storage may not be available depending on the specific sit.
- In drought years there may be too little water in the pond to effectively float and propel the dredge.
- Projects are typically more expensive than conventional excavation methods.
- Sediment pumped to filter bags must be handled a second time when the bags are opened and sediment is loaded into trucks for transportation off site.
- Grinding or mulching dense vegetation can be a messy and difficult process when large amounts of woody debris (logs, stumps) are encountered. Dense vegetation can slow down the dredging process and it may also increase time and cost.

Regardless of method; survey work is usually conducted to better estimate the amount of sediment to be removed and to identify the depths of excavation in order to restore desired capacity. If the removal volume is not defined by surveying then establishing a standard volume per truck and calculating the volume based on truck loads leaving the site can be used to track the volume in cubic yards.

Excavating or removing sediment from stormwater collection systems requires care to prevent turbid water and pollutants from impacting down-stream waters such as wetlands, streams,

rivers, or lakes. This is just as true for winter sediment removal projects as it is for projects conducted during the summer months.

5. Site restoration and erosion control

Site restoration work should be conducted as soon as weather conditions permit and may include:

- Additional clean-up or maintenance of inlet and outlet structures.
- Additional site stabilization work including sediment and erosion control.
- Establishing plants, seed, sod, mulch, or vegetation to prevent erosion (above water line).
- Professional engineer sign-off on project completion.

Erosion control (temporary and permanent) are typically incorporated into plans and specifications for stormwater sediment removal projects. Permanent erosion-control features may include provisions for:

1. Vegetative buffer strips around the pond
2. Design of grassed waterways and overflow channels
3. Armoring of spillways and banks, or other features needed to prevent erosion for the life cycle of the stormwater collection and conveyance system

Temporary erosion control features may include provisions such as mulch, tackifiers, or erosion control blankets to prevent erosion until seeding takes root and vegetation becomes established. Erosion of banks, side slopes, safety benches, spillways, outfalls, channels, and adjacent upland areas disturbed by machinery are all priority areas during site restoration. These areas should be stabilized as quickly as possible to prevent erosion.

Areas susceptible to erosion should be inspected frequently following a sediment removal project. If erosion occurs the eroded areas should be restored as quickly as possible. If erosion persists action must be taken immediately to protect downstream receiving wasters with permanent erosion control. Permanent features may include:

- Bioengineering strategies
- Turf reinforcement mats
- Vegetated-concrete-block-armoring
- Properly sized riprap and filter materials

Vegetated buffer strips (25 feet or more) are recommended to surround the stormwater pond (whenever possible) to prevent erosion from the pond's immediate tributary. Establishing vegetation not only helps maintain the integrity of the pond, it also helps with the ponds overall appearance. Establishing vegetation is important, but care should be taken to prevent trees, shrubs, or brush from growing within 15 feet of the toe of the embankment, or 25 feet from the inlet and outlet structures. Roots can damage pipes and other infrastructure, but trees and shrubs can also clog inlets and outlets and prevent the stormwater pond from functioning properly.

6. Records and documentation to keep on file

It is important to keep good records about the operation and maintenance of stormwater collection systems. Good records will not only assist with an accurate inventory and triage of stormwater ponds, but they can also provide the basis for sound planning in the future. Important records and documentation for sediment removal projects may include:

- Inspection dates and frequency of inspections **(Required by MS4 Permit)**

- Description of maintenance and dates performed **(Required by MS4 Permit)**
- The unique ID# of the pond **(Required by MS4 Permit)**
- Employee training records **(Required by MS4 Permit)**
- Volume of sediment removed in cubic yards **(Required by MS4 Permit)**
- Evaluation, testing, and/or laboratory results **(Required by MS4 Permit)**
- Place of disposition/disposal **(Required by MS4 Permit)**
- "As Built" prints or plans if they exist
- The name and geographical location of the pond with reference to nearest cross roads
- Contractor information, shipping papers/manifests/contractual agreements
- Any other observations about the sediment removal, or work performed, that will help the city operate and maintain that site in the future

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Appendix A: Sediment Sampling and Analytical Technical Guidance

This technical guidance should be shared with staff or environmental consultants responsible for sampling sediments and interpreting the analytical results for the owner or responsible party. It is the responsibility of the owner or responsible party to either train their staff or select consultants who can perform these tasks.

What's New?

- MPCA now requires sediment sampling be conducted regardless of the volume of sediment to be excavated.
- Information regarding selection of a laboratory.

Sediment sampling

The US Environmental Protection Agency's (EPAs) report on "Methods for Collection, Storage and Manipulation of Sediments for Chemical and Toxicological Analyses: Technical Manual" (USEPA 2001) provides guidance on sediment monitoring plans, collection of whole sediments, field sample processing, transport and storage of sediments, sediment manipulations, and quality assurance/quality control (QA/QC) issues. This report should be used as a resource by owners or responsible parties, and their consultants, for sampling and processing stormwater pond sediments. In particular, this user-friendly document provides pictures of sediment sampling equipment, flowcharts for making decisions, check lists, and boxes of important bulleted items.

Sediment characterization

Stormwater pond sediments are very complex, and chemical results can vary greatly within a few yards of each sample. This feature makes it more difficult to provide generic guidance for a broad suite of stormwater ponds. Stormwater ponds may also vary in size and shape, and some ponds may have multiple inlets and outlets. Finally, the type of land uses in the drainage areas of the ponds can influence contaminant concentrations in the pond sediments.

Based on the MPCA's 2009 stormwater pond study (Crane 2014), coal tar-based sealant sources comprised 67.1% of total PAHs in surface sediments of ponds located primarily in residential, commercial, and industrial land use areas. Watersheds where coal tar-based sealants are used on driveways and parking lots will have higher concentrations of PAHs in nearby stormwater pond sediments than those that use either asphalt-based sealants (which have much lower concentrations of PAHs), no sealant, or use other material such as concrete, permeable pavers, or gravel for driveways and parking lots. Even though a statewide ban on coal tar-based sealants went into effect January 1, 2014 in Minnesota, abraded coal tar-based sealant particles from existing driveways and parking lots will continue to wash off into stormwater collection and conveyance systems for years to come. As these parking lots and driveways are sealed with asphalt-based sealants in the future, and with the elimination of new applications of coal tar-based sealants, concentrations of PAHs contamination in sediment deposits is expected to be reduced over time.

The MPCA is requiring owners or responsible parties to sample sediments prior to their disposal to determine concentrations of 17 cPAHs, 10 noncarcinogenic PAHs, and the following metals: arsenic and copper. A list of the specific cPAHs

and noncarcinogenic PAHs can be found in MPCA's "Summary of Stormwater Pond Sediment Testing Results" spreadsheet available on MPCA's website MS4 stormwater web page at: http://www.pca.state.mn.us/sbiza7c. Click on the "Permit" tab and scroll down to the bottom under the "Additional Items" heading. It is the responsibility of the owner or responsible party to evaluate the drainage area of each stormwater collection system to determine whether spills, improper disposal, or the potential for a release from commercial or industrial operations indicate that sampling for other contaminants are needed. For example, if sediment is being removed from a pond in an industrial park and there has been a release of contaminants known to accumulate in sediments (example, nickel from a metal plating facility), the owner or responsible party should include those contaminants on the list for sampling.

Analysis of sediment samples for particle size and total organic carbon (TOC) is optional, but this information may be useful for some beneficial reuse scenarios of the excavated sediment.

The analytical laboratory will provide guidance on how much sediment is needed for each analysis. Since it can sometimes take several months from the time field sampling is conducted to when the analytical results become available, the field sampling needs to be conducted early on in the process to provide timely assessments of management options. Sediment sampling for required analytical parameters needs to be conducted regardless of the volume of sediment to be excavated from the pond.

General guidance for characterizing sediment is as follows:

- Sampling should be to the planned depth of excavation or greater. The MPCA has provided previous guidance to collect sediment samples in two foot intervals (e.g., 0 – 2 ft, 2 - 4 ft), but it is up to the owner or responsible party to collect sediment samples that will cover the depth to be dredged. If it is easier in the field to collect two foot depth intervals, then by all means continue to do this. The important issue is to send a sediment sample to the analytical laboratory that is representative of the entire depth interval to be excavated. Since collecting sediment from two or more long (2 ft) cores may entail a large mass of sediment, it may be easier to slice the core from top to bottom and only analyze half of the slice; this slice can be combined with a deeper layer slice to provide one composite sample for the analytical laboratory to analyze. It is not acceptable to randomly scoop out bits of sediment from different portions of the sediment core to composite together since doing so may miss out on the historical record of sediments (and contaminants) deposited in different depth intervals.
- Core samplers are more appropriate to use to obtain cohesive sediment samples at a depth than grab samplers. Grab samplers can be used to collect surface samples if the sediment samples are too floccy (loose) with vegetative detritus (e.g., parts of cattail stalks/leaves) or are too sandy to be retained in a core sampler.
- Geopositional coordinates need to be collected at the location of each sample site.
- The number of samples to be collected depends on the surface area of the pond. [Note: this is a change in policy from previous MPCA guidance (Stollenwerk et al. 2011) that recommended the number of samples per the estimated volume of dredge material.] The goal is to collect sediment samples that are representative of the material that will be removed to maintain the functionality of the stormwater pond.
- Multiple samples need to be collected, particularly since some compounds may not be detected in all areas of the pond.
- For stormwater ponds with a surface area less than or equal to one acre, at least two stations need to be sampled for chemical analysis. Sample sites may either be selected randomly or by a transect from the main inlet to the outlet of the pond.

- For ponds greater than one acre and less than four acres, one sampling station should be located in each acre and portion of an acre of the pond. In some cases, multiple samples may need to be collected at the same station and composited together to provide an adequate mass of sediment for the analytical work. Sample sites may either be selected randomly or in a transect from the main inlet to outlet of the pond.
- For ponds larger than four acres, divide the pond into four sections (quadrants) as shown in Figure A-1. Select at least five sites (i.e., subsamples) within each quadrant using either the dice pattern shown in Figure A-1 or using a random sampling strategy. Sediment from each subsample needs to homogenized (mixed well) in a precleaned container (large 4 L Pyrex mixing cups work well; larger volumes can use precleaned buckets). An equal aliquot of sediment from each subsample is then composited together to form the sediment sample for that quadrant that is submitted to the analytical laboratory.
- For natural ponds larger than four acres that have an irregular shape, such as bays off the main pond, each bay should be sampled if it is targeted for dredging. Depending on the size of the bay, use the aforementioned guidance for developing a sampling plan.
- If more than 10 samples are collected for analysis (possibly from a study of multiple ponds during the same time period), a field replicate sample needs to be collected for every 10 samples (i.e., 10% of samples). A field replicate is collected in close proximity to the other sample and provides a measure of field precision.
- Remove any rocks, pebbles, trash, large invertebrates (like beetles), or large pieces of detritus from each subsample and composite sample.
- Overlying water needs to be decanted from the subsamples and composite sediment sample in the field prior to splitting the sample into the sample jars.
- Sediment samples from stormwater ponds can vary in their consistency. Some samples may be loose ("soupy") if they contain a lot of cattail or wetland plant detritus. In these cases, collect extra sediment to ensure the laboratory will have enough mass of sediment to conduct their analyses.
- Sediment samples need to be homogenized (mixed well) before splitting the sample into pre-cleaned jars for the PAH and metals analyses. Many laboratories will measure the percent moisture of the sediment samples to convert the results to dry weight measurements. In some cases, the laboratories may provide a separate sampling container for percent moisture, and it may be billed as a separate analysis. The analytical laboratory will provide pre-cleaned jars and sample labels for their clients.
    - It is important with PAHs to use amber, pesticide-grade, pre-cleaned glass jars with Teflon™-lined lids since PAHs may be degraded by sunlight. Use a permanent marker to fill out the sample label; it is helpful to wrap clear packing tape around the label to secure it on the jar since sometimes the labels can come loose while the sample jars are stored on ice during field sampling.
    - The laboratory will provide separate containers for metals.
- Store the sediment samples on ice in a cooler during field sampling. Sample tracking forms or chain-of-custody forms are helpful to use during field sampling to record observations about the sediment samples and to provide field sampling information (e.g., sample station, date, time, sampling equipment, analyses to be done). Most analytical laboratories will provide their clients with chain-of-custody forms.

Submit samples to analytical laboratories

At the end of each field sampling day, either transfer the samples directly to the analytical laboratory, which is preferred, or store them in an interim refrigerator or freezer (depending on the specifications of the laboratory) prior to submittal. Some laboratories may provide a courier pick-up service. When out-

of-town laboratories are used, ship the samples on ice in sturdy coolers using an overnight courier; also use packing peanuts and consider wrapping each jar in bubble wrap.

The analytical laboratories will provide guidance on the holding times for samples based on the analytical parameter. Sediment samples can usually be frozen to extend the holding time, but care must be taken to only fill the sample jars two-thirds full to allow room for expansion while the sediment freezes.

To increase the success of the analytical work, follow these steps prior to submitting the sediment samples:

- Even with decanting overlying water during field sampling, the sample jars may contain a layer of water over the sediment. This water needs to be removed prior to analysis. Either the field sampler (if the samples are stored overnight at an interim facility) or the analytical laboratory needs to remove this overlying water. Laboratory staff will not automatically do this step, and the client needs to specify if they want this done. Use of a pre-cleaned, wide-bore pipette to remove overlying water is better than decanting the sample since it will not disturb the sediment as much in the jar. If the laboratory receives sediment samples that have a high water content, then there may not be enough mass of sediment available to do their analyses.
- Provide the analytical laboratory with recommendations on which sample(s) would make good candidate Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples for the cPAH analysis. This is important since the laboratory receives a subsample of the field sample and does not have the field sampling observations the field sampling crew noted when the sample was collected. If guidance is not provided and the laboratory ends up selecting a sediment sample high in PAHs (as occurred with the MPCA's stormwater pond study), the results of the MS/MSD will not be as useful and the client will still be charged for this analysis. Good candidate samples would be expected to have lower concentrations of PAHs so that the spike level of the MS/MSD will be at least five times greater than the background sample. Avoid designating samples that have strong petroleum odors, have an oil sheen overlying the sediment, or are dark black and oily in appearance since these samples are likely to have high concentrations of PAHs or interferences.
- Provide a copy of the sample tracking form to the analytical laboratory when the samples are submitted or shipped to them.

How to Select an Analytical Laboratory:

Municipalities can access laboratory services through the Minnesota Department of Administration Cooperative Purchasing Venture (CPV) program. There is no charge to sign-up, and the CPV program is open to all municipalities. The CPV program allows municipalities to obtain laboratory services through state-negotiated contract prices. Municipalities who are not currently a CPV member, but would like to become one, may sign-up for this program at the Minnesota Department of Administration's website at: http://www.mmd.admin.state.mn.us/cpv2.htm. The Minnesota Department of Administration's website contains a comprehensive list of state-negotiated contracts. The following list is a sub-set specific to sampling and laboratory analysis.

S-792(5)	SAMPLING & LABORATORY ANALYSIS - ENVIRONMENTAL
L-377(5)	LAB ANALYSIS: AGE DATING OF YOUNG GROUNDWATER
L-369(5)	LAB ANALYSIS: CONTAMINANTS OF EMERGING CONCERN (CECs)
L-368(5)	LAB ANALYSIS: ENVIRONMENTAL ISOTOPE GEOCHEMISTRY
L-379(5)	LAB ANALYSIS-COLILERT®/ECOLI
L-347(5)	LABORATORY ANALYSIS - INVER. SAMP. PROC. & IDENT.

Laboratories that freeze dry the sediment samples prior to extraction and analysis for PAHs and metals, as well as other contaminants of potential concern, reduce or eliminate the problems of wet samples. These laboratories are also able to achieve lower detection limits and more quantitative determinations. Freeze drying of the sample also allows for complete homogenization of the sample matrix, which will result in improved precision. Although not a requirement, better results may be obtained using this preparation method.

Analytical methods

The primary analytical methods are provided below:

The extended list of PAHs, including 17 cPAHs (Table A-1) and noncarcinogenic PAHs, must be analyzed based on the most recent final version of EPA SW-846 Method 8270 by gas chromatography/mass spectrometry (GC/MS) with selective ion monitoring (SIM) as optional.

- Since sediments from stormwater ponds usually contain interfering compounds, it is required that the analytical laboratory run the sample extracts through clean-up columns, rather than just diluting the sample extract to reduce interfering compounds. An example clean-up process is to pass the sample extract through an alumina (and/or silica gel) column to isolate the hydrocarbon fraction. A layer of activated copper can be added to the bottom of the column or to the sample extract to remove any sulfur that may have been present in the samples. Refer to EPA SW-846 Method 8270D (section 11.2), and Method 3600C for guidance on appropriate cleanup techniques. When sample extracts are subjected to cleanup procedures, the associated batch quality control samples, i.e., method blank, laboratory control sample (LCS), MS/MSD etc., must also be subjected to the same cleanup procedures. Note that 14 cPAHs were detected in the MPCA's study of stormwater pond sediments (Crane in review), and either more cPAHs or a greater percentage of cPAHs may have been detected if clean-up columns had been used instead of diluting the sample extracts (Table A-2). These results, in addition to other factors described in Table A-2, were used to shorten the list of cPAHs from 25 to 17 compounds.
- The analytical laboratory must be asked to note J-flagged data that are in-between the method detection limit and the reporting limit.

- Metals, excluding mercury, should be analyzed by inductively coupled plasma—mass spectrometry (ICP—MS) using the most recent final version of EPA SW-846 Method 6020. Occasionally, confirmation of the metal may be needed using graphite furnace atomic absorption spectrophotometry.
- Mercury is analyzed by atomic absorption cold vapor spectrometry using EPA SW-7471.
- Percent moisture should be determined using reference method ASTM D2216 or as instructed by the sample preparation method.
- TOC, if needed, can be analyzed using the most recent final version of EPA SW-846 Method 9060.
- Particle size, if needed, can be analyzed multiple ways to determine percent sand, silt, and clay. If only the inorganic particle size fraction is needed, then the sediment samples will need to be pretreated to remove organic matter. If organic matter is included in the analysis, then the "apparent" (i.e., organic plus inorganic) particle size distribution will be determined.

QA/QC data quality indicators

The field sampling procedures and analytical methods include several QA/QC measures to ensure useable data are collected and measured. In particular, data quality indicators (DQIs) are qualitative and quantitative descriptors used in interpreting the degree of acceptability or utility of data. The principal DQIs are precision, bias, representativeness, comparability, and completeness; these terms are described further in Attachment 1. Establishing acceptance criteria for the DQIs sets quantitative goals for the quality of data generated in the analytical measurement process.

For cPAHs and noncarcinogenic PAHs by EPA Method 8270, the DQIs set by the MPCA are:

- Blanks: <five times the method detection limit (MDL); procedural blanks should be prepared with each analytical batch of 20 samples or less.
- Surrogate Recovery: 40-120% the recovery of the surrogate compounds are used to measure data quality in terms of accuracy (extraction efficiency).
- Laboratory Control Sample (LCS) and Matrix Spike (MS) Recovery: 40-120%; the percent recoveries of target analytes are calculated to measure data quality in terms of accuracy.
- MS/Matrix Spike Duplicate (MSD) Precision: relative percent difference (RPD) <30%; this is used to evaluate the data in terms of precision.
- Reporting Limit of 10-30 µg/kg dry weight for individual PAH compounds.

For metals (arsenic and copper):

- Blanks: <five times the MDL; procedural blanks should be prepared with each analytical batch of 20 samples or less.
- Precision (% RPD): <10%
- Accuracy: 85 – 115%
- Reporting Limit for metals: 0.10 mg/kg dry wt.

Electronic data requirements

- Electronic copies of the data should be obtained from the analytical laboratory in spreadsheet format (e.g., Microsoft Excel). Laboratories will normally report sample concentrations down to the reporting limit. Request that the laboratory also report sample concentrations down to the method detection limit to ensure B[a]P equivalents can be calculated appropriately (Appendix B).
- In the future, the MPCA may be interested in obtaining electronic copies of the analytical results for archiving it in the MPCA's database system. At the present time, though, the MPCA's database platform, EQuIS, is not set-up to accommodate sediment chemistry data.

References

Crane, J.L. in review. Source apportionment of PAHs, risk considerations, and management implications for urban stormwater pond sediments in Minnesota, USA. (This manuscript is undergoing final peer review at an environmental journal.)

Stollenwerk, J., J. Smith, B. Ballavance, J. Rantala, D. Thompson, S. McDonald, and E. Schnick. 2011. Managing dredged materials in the State of Minnesota. Minnesota Pollution Control Agency, St. Paul, MN. MPCA document number wq-gen2-01. http://www.pca.state.mn.us/index.php/view-document.html?gid=12959.

USEPA. 2001. Methods for collection, storage and manipulation of sediments for chemical and toxicological analyses: Technical manual. U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA-823-B-01-002 (http://water.epa.gov/polwaste/sediments/cs/collection.cfm).

USEPA "SW-846 Test Methods for Evaluating Solid Waste", Update IV of the Third Edition; Methods 6020, 8270.

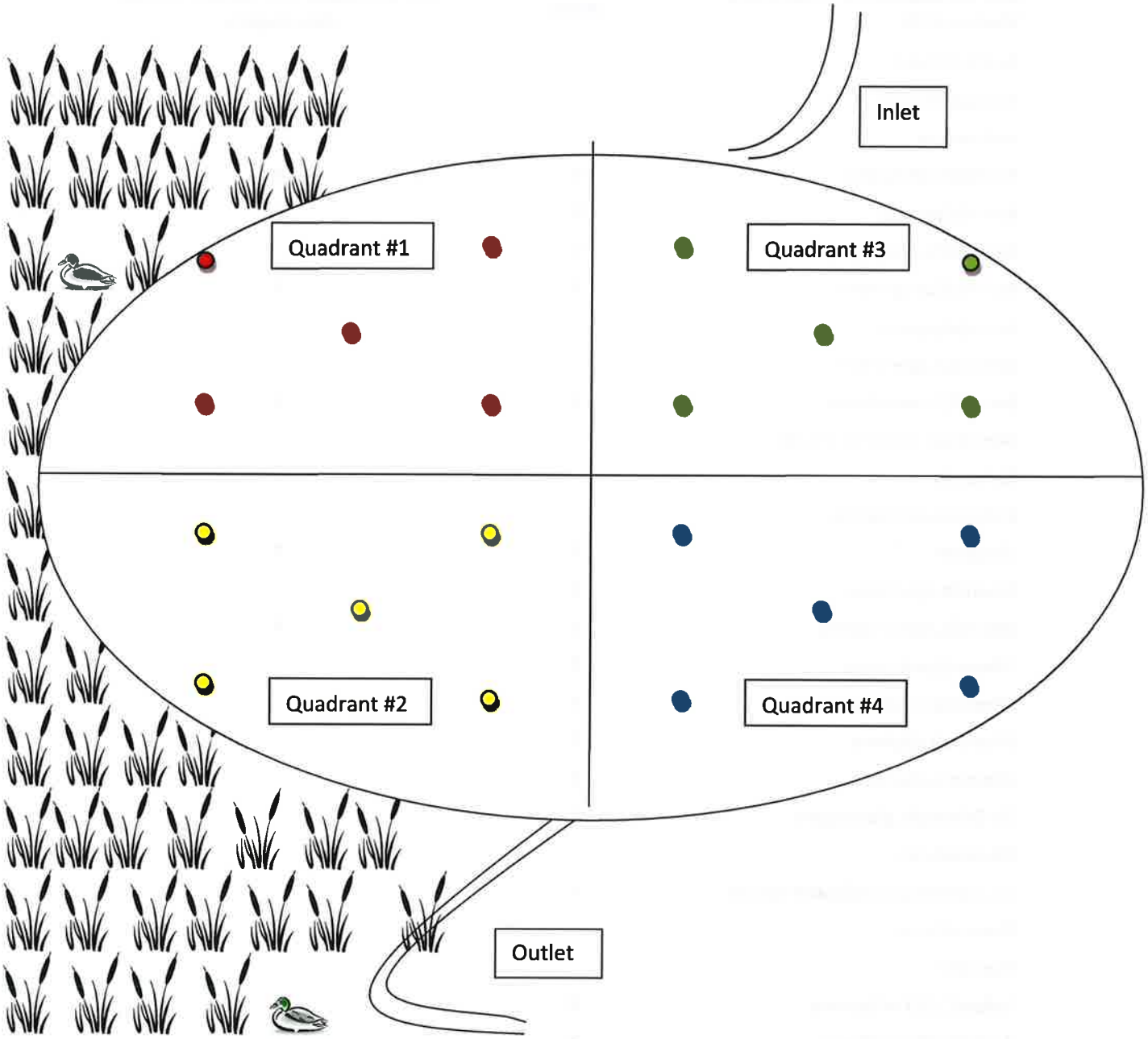

Figure A-1. Sediment sampling scheme for a stormwater pond greater than four acres in size.

Table A-1. List of PAHs to be Analyzed in Stormwater Pond Sediments

PAH Compounds Included in EPA Method 8270	cPAHs	U.S. EPA Group B2 Probable Human Carcinogens
Acenaphthene		
Acenaphthylene		
Anthracene		
Benzo[a]anthracene	X	X
Benzo[a]pyrene	X	X
Benzo[b]fluoranthene	X	
Benzo[j]fluoranthene	X	X
Benzo[e]pyrene		
Benzo[g,h,i]perylene		
Benzo[k]fluoranthene	X	X
Benzofluoranthenes (Total)		
Carbazole		
2-Chloronaphthalene		
Chrysene	X	X
Dibenz[a,h]acridine	X	
Dibenz[a,h]anthracene	X	X
Dibenzo[a,e]pyrene	X	
Dibenzo[a,h]pyrene	X	
Dibenzo[a,i]pyrene	X	
Dibenzo[a,l]pyrene	X	
7H-Dibenzo[c,g]carbazole	X	
Dibenzofuran		
7,12-Dimethylbenz[a]anthracene	X	
Fluoranthene		
Fluorene		
Indeno[1,2,3-cd]pyrene	X	X
3-Methylcholanthrene	X	
5-Methylchrysene	X	
1-Methylnaphthalene		
2-Methylnaphthalene		
Naphthalene		
Perylene		
Phenanthrene		
Pyrene		

Note: A combination of benzo[b]fluoranthene, benzo[j]fluoranthene, and/or benzo[k]fluoranthene frequently coelute together when sediments are analyzed

Table A-2. Percent of Detected cPAHs in a MPCA Study of Metro Area Stormwater Ponds (Crane in review)*

Parameter	# of Detects**	% Detected
Chrysene	44	73.3
Benzo[b&j]fluoranthene	42	70.0
Benzo[a]pyrene	41	68.3
Indeno[1,2,3-c,d]pyrene	38	63.3
Benzo[a]anthracene	34	56.7
Benzo[k]fluoranthene	34	56.7
Dibenzo[a,e]pyrene	33	55.0
Dibenzo[a,i]pyrene	32	53.3
Dibenzo[a,h]pyrene	23	38.3
Dibenzo[a,h]anthracene	15	25.0
Dibenz[a,h]acridine	10	16.7
3-Methylcholanthrene	4	6.7
Dibenzo[a,l]pyrene	4	6.7
5-Methylchrysene	1	1.7

* Sediment samples were analyzed without using clean-up columns. The reporting limits were elevated as a result of diluting the sample extracts to remove chemical interferences. A higher percentage of detected cPAHs probably would have been achieved if the sample extracts had been run through clean-up columns.

** Results exclude field replicate data; n = 60 samples.

The following cPAHs were not detected in any samples: 1,6-Dinitropyrene, 1,8-Dinitropyrene, 1-Nitropyrene, 2-Nitrofluorene, 4-Nitropyrene, 5-Nitroacenaphthene, 6-Nitrochrysene, 7,12-Dimethylbenz(a)anthracene, 7H-Dibenzo(c,g)carbazole, and Dibenz(a,j)acridine.

Note: the MPCA evaluated this list of 25 cPAHs to determine if some of these cPAHs could be dropped from the analytical list for stormwater pond sediments. As indicated in Appendix B, this list of 25 cPAHs was adopted from an air quality program at California EPA. However, not all of these atmospheric cPAHs in California may be of concern in stormwater pond sediments in Minnesota. The above data set was reviewed, in addition to the percentage of detected cPAHs in other sediment data sets available to the MPCA (including some other metro-area stormwater pond sediments and sites included under the MPCA's Remediation Program). Additional input to the MPCA's evaluation came from recommendations from the Minnesota Department of Health for cPAHs to analyze in stormwater pond sediments, as well as human health-based toxicity data, environmental fate information, the results of the MPCA's environmental forensic work to determine sources of PAHs in metro-area stormwater ponds (Crane in review), and commercial production information. All of this information was used to shorten the list of cPAHs from 25 to 17 compounds (Table A-1). As additional data become available, the MPCA will periodically assess whether further changes are needed to this list.

Attachment 1. Data quality indicators

This section is based on quality assurance/quality control (QA/QC) guidance provided by the U.S. Environmental Protection Agency (USEPA 2002). Data Quality Indicators (DQIs) are qualitative and quantitative descriptors used in interpreting the degree of acceptability or utility of data. The principal DQIs are precision, bias, representativeness, comparability, and completeness. Establishing acceptance criteria for the DQIs sets quantitative goals for the quality of data generated in the analytical measurement process.

Precision

Precision is a measure of agreement among replicate measurements of the same property, under prescribed similar conditions. This agreement is calculated as either the range (R) or as the standard deviation (s). It may also be expressed as a percentage of the mean of the measurements, such as relative percent difference (RPD) or relative standard deviation (RSD) (for three or more replicates).

Field precision is assessed through the collection and measurement of field replicates at a rate of one replicate per ten analytical samples. This allows intralaboratory precision information to be obtained on sample acquisition, handling, shipping, storage, preparation, and analysis. Both samples can be carried through the steps in the measurement process together to provide an estimate of short-term precision. An estimate of long-term precision can be obtained by separating the two samples and processing them at different times or by different people and/or analyzed using different instruments.

For duplicate measurements, relative percent difference (RPD) is calculated as follows:

$$RPD = \frac{|D_1 - D_2|}{(D_1 + D_2)/2} \times 100\%$$

RPD = relative percent difference

D_1 = sample value

D_2 = duplicate sample value

$|D_1 - D_2|$ = absolute value of the sample minus the duplicate sample values

For three or more replicates:

$$RSD = (s/x) \times 100$$

RSD = relative standard deviation

s = standard deviation of three or more results

x = mean of three or more results

Standard deviation is defined as follows:

$$s = ((\Sigma(y_i - \text{mean } y)^2 \times 1/(n-1)))^{0.5}$$

s = standard deviation

y_i = measured value of the ith replicate

mean y = mean of replicate measurements

n = number of replicates

Bias

Bias is the systematic or persistent distortion of a measurement process that causes errors in one direction. Bias assessments for environmental measurements are made using personnel, equipment, and spiking materials or reference materials as independent as possible from those used in the calibration of the measurement system. When possible, bias assessments should be based on analysis of spiked samples rather than reference materials so that the effect of the matrix on recovery is incorporated into the assessment. A documented spiking protocol and consistency in following that protocol are important to obtaining meaningful data quality estimates. Spikes should be added at different concentration levels to cover the range of expected sample concentrations. The use of spiked surrogate compounds for GC/MS (SIM) procedures for PAH compounds are used to assess for bias.

Accuracy

Accuracy is a measure of the closeness of an individual measurement of the average of a number of measurements to the true value. Accuracy includes a combination of random error (precision) and systematic error (bias) components that result from sampling and analytical operations.

Accuracy in the field is assessed through the adherence to all sample handling, preservation, and holding times. In order to assure the accuracy of the analytical procedures, an environmental sample will be randomly selected from each sample shipment received at the laboratory, and spiked with a known amount of the analytes to be evaluated. In general, a sample spike will be included in every set of 20 samples tested on each instrument. The spike sample will then be analyzed. The increase in concentration of the analyte observed in the spiked sample, due to the addition of a known quantity of the analyte, compared to the reported value of the same analyte in the unspiked sample determines the percent recovery. The percent recovery for a spiked sample is calculated according to the following formula:

$$\%R = 100\% \times (S-U)/C_{sa}$$

%R = percent recovery

S = measured concentration in spiked sample

U = measured concentration in unspiked sample

C_{sa} = actual concentration of spike added

For situations where a standard reference material (SRM) is used in addition to a matrix spike:

$$\%R = 100\% \times C_m/C_{srm}$$

%R = percent recovery

C_m = measured concentration of SRM

C_{srm} = actual concentration of SRM

Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition. Representativeness is a qualitative term that should be evaluated to determine whether *in situ* and other measurements are made and physical samples collected in such a manner that the resulting data appropriately reflect the media and phenomenon measured or studied.

For field data, representativeness is dependent upon the proper design of the sampling program and will be satisfied by ensuring that the field sampling plan is followed and that proper sampling techniques are used.

Representativeness in the laboratory is ensured by using the proper analytical procedures, meeting sample holding times, and analyzing and assessing laboratory duplicates for the chemistry samples.

Comparability

Comparability is the qualitative term that expresses the confidence that two data sets can contribute to a common analysis and interpolation. Comparability must be carefully evaluated to establish whether two data sets can be considered equivalent in regard to the measurement of a specific variable or groups of variables. In a laboratory analysis, the term comparability focuses on method type comparison, holding times, stability issues, and aspects of overall analytical quantitation.

There are a number of issues that can make two data sets comparable, and the presence of each of the following items enhances their comparability:

- Two data sets should contain the same set of variables of interest
- Units in which these variables were measured should be convertible to a common metric
- Similar analytical procedures and quality assurance should be used to collect data for both data sets
- Time measurements of certain characteristics (variables) should be similar for both data sets
- Measuring devices used for both data sets should have approximately similar detection levels
- Rules for excluding certain types of observations from both samples should be similar
- Samples within data sets should be selected in a similar manner
- Sampling frames from which the samples were selected should be similar
- Number of observations in both data sets should be of the same order or magnitude

These characteristics vary in importance depending on the final use of the data. The closer two data sets are with regard to these characteristics, the more appropriate it will be to compare them. Large differences between characteristics may be of only minor importance, depending on the decision that is to be made from the data.

Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount that was expected to be obtained under normal conditions. Field completeness is a measure of the amount of valid measurements obtained from all the measurements taken in the project. Field completeness for sampling stormwater ponds should be greater than 95%. Laboratory completeness is a measure of the amount of valid measurements obtained from all the measurements taken in the project. Laboratory completeness should be greater than 95% of the total number of samples submitted to the analytical laboratories.

The calculation for percent completeness is as follows:

$$\%C = 100\% \times (V/n)$$

%C = percent completeness

V = number of valid measurements

n = number of measurements planned

Reference

USEPA. 2002. Guidance for quality assurance project plans. U.S. Environmental Protection Agency, Office of Environmental Information, Washington, DC. EPA/240/R-02/009. (http://www.epa.gov/quality/qs-docs/g5-final.pdf).

Appendix B: Soil Reference Values and Benzo[a]pyrene Equivalents

Appendix B provides guidance for comparing contaminant concentrations from stormwater pond sediment to the MPCA's Remediation Division Soil Reference Values (SRVs) and instructions for calculating benzo[a]pyrene (B[a]P) equivalents for carcinogenic polycyclic aromatic hydrocarbons (cPAHs).

Comparing sediment contaminant concentrations to SRVs

Soil Reference Values (SRVs):

SRVs are risk based values derived to assess potential human health exposures from soil at a Remediation cleanup site using a reasonable maximum exposure (RME) scenario. RME scenarios are intended to protect an entire population without being overly conservative by using reasonable upper bound estimates for the most sensitive exposure parameters and central tendency estimates for less sensitive exposure parameters.

They are intended to evaluate both potential non-cancer and cancer risks associated with a contaminant present in soil. Two separate SRVs are calculated for each contaminant, one for non-cancer risk and one for cancer risk. The final SRV reported as the Residential or Industrial SRV is the lower of the two. In other words, it is the smallest concentration of the contaminant that could potentially pose either a non-cancer or cancer risk. For example, for contaminant "X", if the non-cancer SRV is 10 mg/kg and the cancer SRV is 5 mg/kg, then the final SRV is reported as 5 mg/kg.

Since stormwater sediment removed from the stormwater pond is being evaluated for use on dry land as soil, SRVs are an appropriate conservative risk based values to evaluate potential human health risks.

"Summary of Stormwater Pond Sediment Testing Results" Spreadsheet:

MPCA's stormwater program "Summary of Stormwater Pond Sediment Testing Results" spreadsheet allows users to compare stormwater pond sediment data to SRVs. The spreadsheet is available on MPCA's website MS4 stormwater web page at: http://www.pca.state.mn.us/sbiza7c. Click on the "Permit" tab and scroll down to the bottom under the "Additional Items" heading.

The spreadsheet will open to the "BaP equiv. calculation" tab used to compare the data to the SRVs. There are three sections where data can be entered:

- Metals
- Noncarcinogenic PAHs
- Carcinogenic PAHs/ BaP Equivalents

For metals and noncarcinogenic PAHs

1. Enter the chemicals reporting limit into column B, "Reporting Limit"
2. Enter the core location (sample) data (concentrations) in columns E through J, "Core Location #"
3. Compare the chemical data (concentrations) in columns E&f, G&H and I&J to the Residential and Industrial SRVs listed in columns C and D

For carcinogenic PAHs/B[a]P Equivalents when all cPAHs have been detected

1. Enter the chemicals reporting limit in column B, "Reporting Limit"

2. Enter the core location data (concentration) into columns E, G and I, "Core Location #"
3. The spreadsheet automatically calculates the BaP Equivalent concentration in columns F, H and J, "BaP Equiv. Conc."
4. Compare the "Total B[a]P equivalents Detected Data Only" in columns F, H and J, row 39, to the Residential and Industrial SRVs listed for B[a]P in columns C and D

Please see additional details regarding the calculation of B[a]P equivalents, including the use of data that contains samples where cPAHs were not detected (nondetects), in the next section.

Calculating B[a]P equivalents

Minnesota Department of Health Guidance

The Minnesota Department of Health (MDH) issued new guidance regarding the calculation of B[a]P equivalents in August, 2013 that was revised in October, 2014 (http://www.health.state.mn.us/divs/eh/risk/guidance/pahguidance.pdf). Several new cPAHs were added to the required list to be analyzed that currently do not have analytical methods for soil. At this time it is not feasible to adopt MDH's August, 2013 guidance for use with the Remediation Division's soil reference values (SRVs). MPCA will continue to use the potency equivalency factor (PEF) method previously recommended by MDH to evaluate human health risks from cPAHs until new analytical methods for soil are developed for the new cPAHs on the revised list.

MDH's previous recommendation was based on evaluating the 25 cPAHs that the California Environmental Protection Agency (Cal EPA) identified as being probable or possible human carcinogens (Cal EPA 1993, 2009; MDH 2001). Since toxicity data does not exist for all individual cPAHs, they are evaluated according to how potent they are in relation to a reference contaminant, B[a]P. Assuming B[a]P has a toxicity of one, other cPAHs are assigned a PEF to indicate how toxic they are in comparison to B[a]P. Table B-1 lists B[a]P PEFs for 17 cPAHs to be measured in stormwater pond sediments (see Appendix A, Table A-2 for additional explanation). This section only pertains to cPAHs, which are evaluated by using B[a]P equivalents. Noncarcinogenic PAHs are evaluated individually and are not included in the total B[a]P equivalent concentration.

Table B-1. B[a]P Potency Equivalency Factors (PEFs)

cPAH	PEF	cPAH	PEF
Benz[a]anthracene*	0.1	Dibenzo[a,e]pyrene	1
Benzo[b]fluoranthene	0.1	Dibenzo[a,h]pyrene	10
Benzo[j]fluoranthene	0.1	Dibenzo[a,i]pyrene	10
Benzo[k]fluoranthene	0.1	Dibenzo[a,l]pyrene	10
Benzo[a]pyrene	***1.0***	7,12-Dimethylbenzanthracene	34
Chrysene	0.01	Indeno[1,2,3-c,d]pyrene	0.1
Dibenz[a,h]acridine	0.1	3-Methylcholanthrene	3
Dibenz[a,h]anthracene	0.56	5-Methylchrysene	1
7H-Dibenzo[c,g]carbazole	1		

* A common synonym for this compound is Benzo[a]anthracene

** Benzo[a]pyrene is the reference contaminant

Site sediment concentrations of individual cPAHs are multiplied by the corresponding PEF value in Table B-1 to obtain an individual B[a]P equivalent concentration. These individual B[a]P equivalent

concentrations are summed for all cPAHs to arrive at a total B[a]P equivalent concentration that is compared to the B[a]P SRV. For example, Table B-2 shows how the B[a]P equivalents were calculated for a hypothetical stormwater pond where all 17 cPAHs were detected in the sediment sample. The "Site Concentration" for each cPAH is entered into Column C. Each cPAH concentration is multiplied by the corresponding "Potency Equivalency Factor (PEF)"in Column B to arrive at the individual "BaP Equivalent" concentration in Column D. B[a]P equivalent concentrations are then summed to obtain the "Total BaP Equivalents" at the bottom of Column D.

Table B-2. Example – Calculating Total B[a]P Equivalents for Detected cPAH Data

A cPAH Contaminant	B Potency Equivalent Factor (PEF)	C Site Concentration mg/kg	D BaP Equivalent mg/kg
Benz[a]anthracene	0.1	2.190	0.219
Benzo[b]fluoranthene*	0.1	3.750	0.375
Benzo[j]fluoranthene*	0.1	0.000	0.000
Benzo[k]fluoranthene	0.1	1.320	0.132
Benzo[a]pyrene	1	2.270	2.270
Chrysene	0.01	2.790	0.028
Dibenz[a,h]acridine	0.1	0.219	0.022
Dibenz[a,h]anthracene	0.56	0.270	0.152
7H-Dibenzo[c,g]carbazole	1	0.160	0.160
Dibenzo[a,e]pyrene	1	0.828	0.828
Dibenzo[a,h]pyrene	10	0.419	4.190
Dibenzo[a,i]pyrene	10	0.391	3.910
Dibenzo[a,l]pyrene	10	0.150	1.500
7,12-Dimethylbenzanthracene	34	0.150	5.137
Indeno[1,2,3,-c,d]pyrene	0.1	1.350	0.135
3-Methylcholanthrene	3	0.170	0.512
5-Methylchrysene	1	0.160	0.160
		Total BaP Equivalents =	**19.730**

* In this example benzo[b]fluoranthene and benzo[j]fluoranthene coeluted. In other words, the combined concentration of both cPAHs was reported by the laboratory as 3.75 mg/kg benzo[b and j]fluoranthene. Since both contaminants have the same PEF value, 3.75 was entered for the sediment concentration of benzo[b]fluoranthene while the concentration of benzo[j]fluoranthene was entered as zero.

How to Handle Nondetect cPAH Data:

If the data contains cPAHs that were not detected (nondetects) use the instructions below for Kaplan Meier Statistics to calculate a B[a]P equivalent concentration.

Kaplan Meier Statistics

Step 1

- Determine the percentage of cPAH nondetects by dividing the number of nondetects by the total number of cPAHs sampled and then multiplying by 100. For example, if you sampled all 17 cPAHs and results indicated 10 nondetects, you would perform the following calculation to determine the percentage of nondetects: 10/17*100 = 58% nondetects.
    1. **If you have 80% or less nondetects, proceed to Step 2.**
    2. **If you have greater than 80% nondetects, proceed to step 3.**

Step 2 - 80% or Less Nondetects

- Use the "Summary of Stormwater Pond Sediment Testing Results" spreadsheet to calculate the potency equivalent factor (PEF) for each of the cPAHs analyzed. The spreadsheet is available on MPCA's website MS4 stormwater web page at: http://www.pca.state.mn.us/sbiza7c. Click on the "Permit" tab and scroll down to the bottom under the "Additional Items" heading.
    1. The spreadsheet will open to the "BaP equiv. calculation" tab.
    2. Under the "Carcinogenic PAH/B[a]P Equivalents Section, enter the site data (concentration) for any detected cPAH or the reporting limit for a nondetect cPAH in columns E, G and I, "Site Conc.", for each core location (sample).
    3. B[a]P equivalent concentration will automatically calculate and be displayed in the "BaP Equiv. Conc." columns F, H and J. The spreadsheet automatically multiples the "Potency Equiv. Factor (PEF)" in column C by the "Site Conc." In columns E, G and I.
    4. The "BaP Equiv. Conc." values from columns F, H and J are the values that need to be transferred to the Kaplan Meier spreadsheet.
- Use the "KMStats15" or Kaplan Meier Spreadsheet to calculate the "UCL95 (t)" or estimated 95th percent upper confidence limit of the mean BaP equivalent concentration. You will need to use a separate spreadsheet for each core location (sample).
    1. Order you cPAH data from highest to lowest concentration (for detects) or reporting limit (for nondetects) on the "Your Data Here" tab. When the concentration of a cPAH is below the reporting limit (usually reported as a <# on the laboratory report), use the reporting limit as the concentration.
        a. If you find it easier you can use a separate tab in the Kaplan Meier spreadsheet to order your data.
        b. List all the cPAH concentrations (for detects) or reporting limits (for nondetects) in the "Concentration" column.
        c. Order them highest to lowest.
        d. Combine those that are identical.
        e. Enter the number of times that exact **concentration** was reported for that sample under the "# Detects" column.
        f. Enter the number of times that exact **reporting limit** was reported for that sample under the "# Nondetects" column.
        g. It is possible to have a concentration and reporting limit that are the same value resulting in values under both the "# Detects" and "# Nondetects" columns.
        h. The last row entered always needs to be a detected concentration due to "Effron's Bias" as explained in the Kaplan Meier spreadsheet. Regardless of whether your last row is a detected or nondetected value, enter it as a detected value.

i. Multiply the "UCL95 (t)" value (estimated 95th% upper confidence limit of the mean) BaP equivalent concentration by the number of individual cPAHs analyzed to calculate the Kaplan Meier BaP equivalent concentration. This Kaplan Meier BaP equivalent concentration should be compared to the BaP soil reference value (SRV) for the applicable soil land use category (Residential or Industrial). Enter the Kaplan Meier BaP equivalent concentration in the "Summary of Stormwater Pond Sediment Testing Results" spreadsheet, column F, H or J, row 40, "Total B[a]P Equivalent Kaplan Meier". This is the concentration that should be compared to the BaP soil reference value (SRV) for the applicable soil land use category (Residential or Industrial) in columns C and D.

NOTE: If the laboratory reports the three fluoranthenes (benzo[b]fluoranthene, benzo[j]fluoranthene and benzo[k]fluoranthene) as total fluoranthenes count this as one cPAH. If the laboratory reports two of the fluoranthenes (benzo[b]fluoranthene and benzo[j]fluoranthene) as benzo[b,j]fluoranthene, count this as one cPAH.

Step 3 – Greater than 80% Nondetects

- When a dataset has greater than 80% nondetects, Kaplan Meier is no better than stating the BaP equivalent concentration is somewhere between the BaP equivalent concentration calculated when replacing the nondetects with the full reporting limit and when replacing the nondetects with zeros.

1. Determine if appropriate reporting limits have been used by comparing the reporting limits used for your samples (found in the laboratory report) to those listed in the Table B-3 below.
   a. If the reporting limit used by the laboratory for a cPAH is equal to or less than the reporting limit in the table, appropriate reporting limits were used for that cPAH. All cPAHs need to be checked. If all cPAHs have been analyzed using appropriate reporting limits, skip to number 2 below to calculate total BaP equivalents.
   b. If any of the cPAHs did not use an appropriate reporting limit, you cannot calculate BaP equivalents using the instructions in number 2 below. In this case, you will need to either re-analyze your samples for the cPAHs that did not have appropriate reporting limits or obtain new samples. The laboratory will be able to help you decide which one makes sense in your case.
      i. If the laboratory is able to re-run the sample and obtain a lower reporting limit, equal to or less than that in Table B1, it might be beneficial to run your sample again for that cPAH.
      ii. If the laboratory had to dilute your sample resulting in an increase in the reporting limit for a cPAH, you will probably need to obtain new samples.
2. To calculate BaP equivalents follow these steps:
   a. Request the lab report for all sample values down to the method detection limit rather than the reporting limit. Normally the lab will provide data down to the reporting limit although they are able to obtain data down to the method detection limit in most cases.
   b. In the "Summary of Stormwater Pond Sediment Testing Results", under the "Site Concentration" column, enter either 1) sample concentration down to the method detection limit if the lab was able to provide this or 2) ½ the detection limit if the lab was not able to provide a concentration down to the method detection limit for each cPAH for each core location (sample).
   c. The B[a]P equivalent concentration will automatically calculate in the "BaP Equivalent Concentration" column. The spreadsheet automatically multiples the "Potency Equivalent Factor (PEF)" column by the "Site Concentration" column and enters it into the "BaP Equivalent Concentration" column.

d. After all of the site Concentrations ("Site Concentration") have been entered, the total BaP equivalent concentration is displayed under the "Total BaP Equivalents Detected Data Only", row 39, under columns F, H and J, "BaP Equiv. Concentration" For each core location (sample). The spreadsheet automatically sums all of the individual cPAH "BaP Equivalent Concentration" Values and enters it into the "Total BaP Equivalents Detected Data Only" tab cell under each core location (sample).

Table B-3. cAPH Reporting Limits

Carcinogenic PAH (cPAH)	Potency Equivalent Factor (PEF)	Appropriate Maximum Reporting Limit
Benz[a]anthracene	0.1	0.01
Benzo[b]fluoranthene	0.1	0.03
Benzo[j]fluoranthene	0.1	0.03
Benzo[k]fluoranthene	0.1	0.03
Benzo[a]pyrene	1	0.01
Chrysene	0.01	0.01
Dibenz[a,h]acridine	0.1	0.01
Dibenz[a,h]anthracene	0.56	0.01
7H-Dibenzo[c,g]carbazole	1	0.01
Dibenzo[a,e]pyrene	1	0.01
Dibenzo[a,h]pyrene	10	0.01
Dibenzo[a,i]pyrene	10	0.01
Dibenzo[a,l]pyrene	10	0.01
7,12-Dimethylbenzanthracene	34	0.01
Indeno[1,2,3,-c,d]pyrene	0.1	0.01
3-Methylcholanthrene	3	0.01
5-Methylchrysene	1	0.01

References

Cal/EPA (California Environmental Protection Agency). 1993. Benzo[*a*]pyrene as a toxic air contaminant. Part B. Health effects of benzo[*a*]pyrene. Air Toxicology and Epidemiology Section, Office of Environmental Health Hazard Assessment, Berkeley, CA.

Cal/EPA. 2009. Technical support document for cancer potency factors: Methodologies for derivation, listing of available values, and adjustments to allow for early life stage exposures. Appendix B. Chemical-specific summaries of the information used to derive unit risk and cancer potency values. Office of Environmental Health Hazard Assessment, Oakland, CA. (http://www.oehha.ca.gov/air/hot_spots/2009/AppendixB.pdf).

Helsel, D.R. 2010. Summing nondetects: Incorporating low-level contaminants in risk assessment. Integr. Environ. Assess. Manage. 6:361-366. (article is freely available at: http://onlinelibrary.wiley.com/doi/10.1002/ieam.31/full).

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MDH (Minnesota Department of Health). 2001. Polycyclic aromatic hydrocarbons: Methods for estimating health risks from carcinogenic PAHs. Minnesota Department of Health, St. Paul, MN. (http://www.health.state.mn.us/divs/eh/risk/guidance/pahmemo.html).

MDH (Minnesota Department of Health). 2014. Guidance for Evaluating the Cancer Potency of Polycyclic Aromatic Hydrocarbon (PAH) Mixtures in Environmental Samples. Minnesota Department of Health, St. Paul, MN. (http://www.health.state.mn.us/divs/eh/risk/guidance/pahguidance.pdf).

Section IV.
Enforcement Response Procedures

TABLE OF CONTENTS

APPENDICES

ACRONYMS

BMP	Best Management Practice
CGP	Construction General Permit
ECC	Erosion Control Coordinator
ERP	Enforcement Response Plan
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
ROW	Right-of-Way
SWPPP	Stormwater Pollution Prevention Plan
USEPA	United States Environmental Protection Agency

ENFORCEMENT RESPONSE PROCEDURES

1 INTRODUCTION AND BACKGROUND

This Stormwater Enforcement Response Plan (ERP) codifies enforcement procedures used by the City of Alexandria (City) to enforce provisions of its National Pollutant Discharge Elimination System (NPDES) Statewide Stormwater Permit (hereafter referred to as the MS4 Permit). Under the MS4 permit, the City is to control the release of pollutants to and discharges from the municipal separate storm sewer system (MS4) which is owned or operated by the City through rules and regulations controlling stormwater discharges. The MS4 Permit will do the following:

- Control the contribution of pollutants to the MS4 by stormwater and non-stormwater discharges associated with industrial activity and the quality of stormwater discharged from sites of industrial activity.
- Prohibit illicit discharges to the MS4.
- Control the discharge to the MS4 from spills, dumping, or disposal of materials other than stormwater.
- Require compliance with conditions in State statutes, rules, permits, contracts, and orders.
- Carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance and non-compliance with permit conditions including the prohibition on illicit discharges to the MS4.

The City's MS4 consists of a conveyance or system of conveyances owned by the City that is designed or used for collecting or conveying stormwater, which is not a combined sewer and which is not part of a publicly owned treatment works.

1.1 Purpose

This ERP describes the measures available to the City to exercise its authority. The ERP identifies enforcement procedures designed to encourage a timely response by the discharger. Implementation of the ERP will ensure a consistent response throughout the City and avoid confusion, delays, and disputes over enforcement for stormwater pollution prevention.

An effective enforcement program depends on detailed and comprehensive documentation of all contacts with the alleged violator and of all evidence establishing the violation. Investigations and enforcement actions must be handled quickly. The City is required by the Permit to investigate reports of illicit discharges, initiate enforcement action to eliminate the source(s) of the discharge, and to administer a penalty to the party responsible for discharging.

1.2 Alexandria's Permit History

The City's current MS4 permit was issued by the State of Minnesota's Pollution

Control Agency (MPCA) and became effective on August 1, 2013. This permit replaces the previous National Pollutant Discharge Elimination System (NPDES) MS4 permit issued by the MPCA on June 1, 2006. The scope of the current permit includes all stormwater discharges associated with construction sites, industrial facilities, maintenance facilities, and other activities within the MS4's jurisdiction.

1.3 Types of Enforcement Actions

The City will use City Code, permits, and penalties to enforce illicit discharges to the City's MS4 system. The City anticipates two general types of stormwater violations: construction sites and illicit discharges or connections to the City's MS4. Potential violators include construction contractors, businesses, industries, private citizens, and other governmental agencies which are detailed below.

1.3.1 Construction Sites

The City's construction contractors are required to obtain all required permits pertaining to land disturbance activities from various agencies. Permits could include watershed, DNR, City, or State permits.

The City is responsible for inspection oversight and must ensure that a trained employee inspects construction activity at sites until final stabilization is achieved. The MS4 permit requires the City to implement a system to monitor contracted construction activities and to enforce Permit provisions. The City is required to list and describe all violations and enforcement responses taken for construction activities in the Annual Report submitted to MPCA.

The City's authority to take enforcement action at construction sites is derived from its city code along with permit language.

1.3.2 Illicit Discharges and Connections

The Permit also requires Alexandria to take measures to detect and eliminate illicit discharges and connections to the City's MS4. An illicit discharge is defined as any discharge to a MS4 that is not composed entirely of stormwater, with the exception of allowable non- stormwater discharges and separately permitted discharges. Illicit connections are defined as any man-made conveyance that connects an illicit discharge directly to the MS4. The City is required to implement a program to minimize, detect, investigate, and eliminate illicit discharges and connections, including unauthorized non-stormwater discharges and spills, into the MS4 system.

2 METHODS OF DISCOVERY OF NON-COMPLIANCE

Reports of a stormwater violation or non-compliance may come from one of the following sources:

- Reports from City Staff – Illicit discharges and discharges of sediment or other pollutants from the construction sites, facilities, or other sources within the City's MS4 may be observed by City staff as they conduct normal activities such as driving to or from job sites or when inspecting other activities. Such non-compliances could include water and wind erosion, sediment tracking onto local streets, poor housekeeping, incorrect location of concrete washouts, and failed or ineffective best management practices (BMPs).

- Permit Compliance Activities – Non-compliances may be discovered through permit-required inspections or monitoring, including construction site inspections, dry weather screening, and stormwater sampling.

- Contractor Compliance Activities – A construction contractor's failure to comply with the State's Construction General Permit requirements such as conducting and submitting inspection reports, obtaining annual certifications, preparing and implementing Stormwater Pollution Prevention Plans (SWPPPs).

- Reports from the Public – Public complaints may come directly to City or through other local, state or federal government agencies.

3 CONSTRUCTION CONTRACTOR ENFORCEMENT

This section imposes the obligation the Contractor to perform their duties in an honest, diligent, and cooperative manner.

The following section describes the City's authority and the mechanisms for enforcing Permit provisions on construction sites within the boundaries of the City's MS4 jurisdiction.

3.1 Contractor Compliance Requirements

Compliance with stormwater permits and laws on construction projects within the City's MS4 must be enforced according to these Enforcement Response Procedures.

- Contractors are to comply with the State's NPDES CGP, and City permits for regulated construction projects, including the contractor's obligation to file a NOI and obtain authorization under the State CGP for each construction project or site. The contractor shall also file a NOT for each construction project or site, either terminating their responsibility if final stabilization has been achieved, or transferring it to another contractor for completion.

3.2 Construction Contract Enforcement

When stormwater non-compliance is identified by the construction observer, City employee, or resident engineer, enforcement actions will be taken promptly. The City will take appropriate sanctions against the contractor based on the nature and severity of the situation. Non-compliances will be classified as minor or major violation. Major violations are generally those acts or omissions that lead to a discharge of pollutants to stormwater. If the major violation includes an illegal discharge to the City's MS4, the discharge must be stopped immediately. Minor violations are generally instances of non-compliance that do not directly result in such a discharge. Serious discharges or an imminent threat of discharge on a project may require an immediate escalation to a higher level of enforcement. The level of enforcement response will depend upon several of the following factors:

- Severity of the violation: the duration, quality, and quantity of pollutants, and effect on public safety and the environment

- The violator's knowledge (either negligent or intentional) of the regulations being violated

- A history of violations and /or enforcement actions (individual or contractor)

- The potential deterrent value of the enforcement action

The City will use a progressive enforcement policy escalating the response when a contractor fails to respond in a timely manner. If the City identifies a deficiency in the implementation of the approved SWPPP or amendments and the deficiency is not corrected immediately, the project is in non- compliance. The recommended sequence of enforcement actions are detailed below.

3.2.1 Verbal Warning

This action is a verbal exchange between an inspector or the resident engineer and the alleged violator. The information exchanged will be documented by the inspector. Typically, no letter is written if the problem is corrected immediately and the inspector or resident engineer observes the corrective action and deems it appropriate.

3.2.2 Written Warning

A warning letter may be issued if the non-compliance continues after the verbal warning is issued, if the non-compliance cannot be corrected while the inspector or resident engineer is on site, or if the non-compliance is a significant violation. The warning letter will document the reason(s) for the violation. A sample letter to violators is provided in Appendix B.

3.2.3 Stop Work Order

If the verbal and written warnings do not result in corrective action, the City may stop work (full or partial shutdown) at the construction site, and/or withhold the scheduling of building inspections and the issuance of a Certificate of Occupancy. Upon successful corrective action in response to a stop work order, a resume work order may be issued and/or building inspections and the issuance of a Certificate of Occupancy may continue. Example Stop Work and Resume Work Orders are provided in Appendix C.

3.2.3.1 Temporary Suspension of Work

If immediate action is required due to an imminent threat of discharge, the City may temporarily suspend work on the project. Contractors expense to complete the work.

3.2.3.2 Require Corrective Action

The City may require the permit holder to undertake corrective or remedial action to address any release, threatened release, or discharge of the hazardous substance, pollutant or contaminant, water, wastewater, or stormwater.

3.2.3.3 Revocation of Permit

The City may revoke any permit issued to the permit holder if

corrective action is not completed.

3.2.3.4 Abatement

The City may correct the deficiency or hire a contractor to correct the deficiency. The issuance of a permit constitutes a right-of-entry for the City or its contractor to enter the construction site for the purpose of correcting deficiencies in erosion control. If the City corrects the deficiency or hires a contractor to correct the deficiency, the City may require reimbursement to the City for all costs incurred in correcting stormwater pollution control deficiencies, pursuant to City Ordinance 622, Subd. 10.

4 ILLICIT DISCHARGES AND CONNECTION ENFORCEMENT

The Permit requires the City to implement and enforce a program that ensures that the City effectively prohibits non-stormwater discharges into its MS4. In addition, neighboring property owners are not allowed to occupy, use or interfere with public ROW without permission. Any discharge/connection without permission is an illegal encroachment on the City's MS4 and is required to cease immediately. A discharge/connection can be discovered in two ways, either through routine inspection or due to a complaint.

Similarly to the process in **Section 3.2**, notification of observed illicit connections or discharges will be carried forward to the alleged illegal connector/discharger by the inspector or observer. The City will use the following progressive enforcement policy, escalating the response when a discharger fails to respond in a timely manner.

4.1 Verbal Warning

When a routine inspection of the drainage system identifies an illegal connection/discharge to the City's MS4 system, the discharge must be stopped immediately. The inspector shall document the discharge on an Illicit Discharge Detection and Elimination (IDDE) Inspection Form (Appendix A), which will be provided to the City Engineer.

If the source of the connection is evident, the observer/inspector will contact the connector/discharger directly by phone or in person to discuss the discharge. The communication will include requesting any permits or other authorizations and providing a follow up. If the discharge is permitted or authorized (documentation is required), no further action is required; if the discharge is not authorized, it will need to be ceased immediately and a Nusiance Fee per the current City of Alexandria Fee Schedule will be charged to the illegal connector/discharger.

4.2 Written Warning

If after the verbal warning the illicit connection/discharge has not been corrected, the City Engineer will issue a "Notice of Illegal Discharge and Demand for Corrective Action" letter to the property owner (example letter in Appendix D) and a second Nuisance Fee will be charged per the current City of Alexandria Fee Schedule. The letter will request that the connection/discharge be ceased or removed immediately. A follow up inspection will be performed by the Street Department to ensure compliance. If the connection/discharge has not been corrected, the incident will be referred internally to the City Engineer for further review.

4.3 Removal of Connection/Discharge

The City may remove the illegal connection/discharge if it has not been corrected. If the City removes the illegal connection/discharge, the responsible

party will be charged for the costs to repair/abate the illicit discharge as well as administration fees. The responsible party is also subject to civil action for damages.

4.4 Civil Action

If the illegal connection/discharge is not corrected, the City Engineer may forward the matter to one of the enforcement authorities listed below. Additional measures will be escalated as needed to achieve compliance.

4.4.1 Minnesota Pollution Control Agency

Authority to administer the state MS4 permit in Minnesota rests with the MPCA. The MPCA has several enforcement mechanisms for violations of NPDES rules, including fines. In compliance with the provisions of the federal Clean Water Act (CWA), as amended, (33 U.S.C. 1251 et seq); 40 CFR Parts 122, 123, and 124, as amended; Minnesota Statutes Chapters 115 and 116, as amended; and Minnesota Rules Chapter 7001 and 7090.

4.4.2 United States Environmental Protection Agency

Although the USEPA delegated authority for the NPDES Program to the state of Minnesota, the USEPA reserves the authority to apply fines in addition to fines issued by the MPCA. Federal environmental regulations based on the Clean Water Act allow the USEPA to levy fines on dischargers of up to $27,500 per day per violation.

5 EMERGENCY RESPONSE CONDITIONS

The City's MS4 Permit identifies "discharges from emergency situations where federal rules specify washing as the preferred method to assure public safety" as an authorized non-stormwater discharge. Discharges or flow from firefighting activities and other discharges authorized by the City and/or the State Duty Officer that are necessary to protect public health and safety are not subject to enforcement action.

6 REPORTING REQUIREMENTS

The City shall provide a list and description of all violations and their resolutions, including any enforcement actions taken against contractors, corporations, or other entities in the Annual Report to MPCA. At a minimum, the inspector should document the source of the complaint, the date, time, and location of the violation, the contact person (if any), a description of the nature of the non-compliance or illicit discharge, corrective actions, dates and type of enforcement used to compel compliance, referrals to other regulatory organizations (if any), and date of final resolution.

APPENDIX A

Illicit Discharge Detection &
Elimination Inspection Form

Illicit Discharge Detection and Elimination Inspection Form (MCM 3)

General Information:		
Location of Violation:		
Name of trained staff conducting inspection:	Inspection Date:	Time: AM PM
Name of violator (if available):	Weather:	Photos taken? ☐ Yes ☐ No
Inspection Reason: ☐Regular Inspection ☐Complaint ☐Alleged illicit discharge	Inspection completed during dry weather condition (period of 72 or more hours of no precipitation): ☐ Yes ☐ No Rainfall in past 24 hours: _____ (inches) Rainfall Data Source: ☐ on-site gauge ☐ weather station w/in 1 mi	

Citizen Call-In Information (*for citizen call-in incidents only*):			
Call Taken By:	Date of Call:	Time of Call: AM/PM	Contact Information for Caller *(optional):*

Incident Location *(Provide one or more below)*

Outfall ID #: _____ Closest Street Address/Landmark**:** _____

Detection and Tracking:	**Type of Discharge:**	
☐Visual inspection ☐Mobile camera ☐Sample Collected ☐Other effective investigation tool: _____	☐Illegal dumping ☐Sanitary sewer ☐Cross connection ☐Floor drain connection to storm sewer	☐Inflow / infiltration ☐Failing septic system ☐Pump station failure ☐Other: _____

☐Inlet (City ID # _____) ☐Outlet (City ID # _____)

Description of Discharge:	
☐Flow present?	☐Turbidity _____
☐Estimated discharge _____	☐Floatables _____
☐Water Color _____	☐Sedimentation _____
☐Odor _____	☐Oil Sheen _____

Reporting:	
Responsible Party: _____ (if identified)	Follow-up Required? ☐Yes ☐ No
MN State Duty Officer Notified? ☐ Yes ☐ No (1-800-422-0798) Duty Officer Report # _____	Name of Staff to conduct Follow-up:

Enforcement used: ☐ Verbal Warning Date: _____ ☐ Written Warning Date: _____ ☐ Stop Work Order Date: _____ ☐ Other: _____. Date: _____.

Corrective Actions (including completion schedule and resolution date):

APPENDIX B

Non-Compliance Notice to Contractors

CITY OF ALEXANDRIA
NONCOMPLIANCE NOTICE

FROM: _____
_____
_____
_____

TO: _____
_____
_____
_____

You are hereby notified that inspection on <insert date> indicates that the
_____
_____
_____
_____
_____
Does not conform to permit/city code requirements for discharges to the city's MS4 system.

APPENDIX C

Stop Work Order & Resume Work Order

CITY OF ALEXANDRIA
BUILDING INSPECTION OFFICE
704 Broadway Street
Alexandria, MN 56308
320-763-6678

STOP WORK ORDER

PENALTY FOR REMOVAL OF THIS TAG

REMARKS:

ADDRESS: _____

INSPECTOR: _____

DATE: _____

CITY OF ALEXANDRIA
BUILDING INSPECTION OFFICE
704 Broadway Street
Alexandria, MN 56308
320-763-6678

RESUME WORK ORDER

PENALTY FOR REMOVAL OF THIS TAG

REMARKS:

ADDRESS: _____

INSPECTOR: _____

DATE: _____

APPENDIX D

Notice of Illegal Discharge and
Demand for Corrective Action

NOTICE OF ILLEGAL DISCHARGE OR CONNECTION

Person or Business Name
Address
Alexandria, MN 56308

Dear Property Owner:

The City of Alexandria is responsible for maintaining the storm sewer system. The Minnesota Pollution Control Agency (MPCA) Municipal Separate Storm Sewer System General Permit requires the City to control the amount of pollutants entering the drainage system. This includes the detection and elimination of illegal discharges or connections to the system that may contain pollutants or are otherwise not allowed. Left uncorrected, any pollutants entering the system will ultimately impact nearby lakes or streams as storm drainage is not treated at any sort of treatment facility. Any discharge/connection without permission is illegal and requires immediate termination of the discharge.

An inspection of the drainage system has occurred in the vicinity of your property and an illegal connection/discharge was discovered entering into the City system. The discharge/connection was discovered on <insert date> at <insert business name and address>.

Indicators or Source include <insert indicator or source>.

Photographs of this discharge/connection are enclosed with this letter. In addition, I have enclosed an aerial photograph showing the location of this discharge/connection.

This discharge or connection must be ceased immediately and two Nusiance Fees per the current City of Alexandria Fee Schedule shall be paid. A follow-up investigation will be conducted to ensure compliance. If the situation is not corrected, the City will take corrective measures, including but not limited to referring this matter to the MPCA so that enforcement action can be taken, which may include the issuance of a fine. In that instance, the City may remove the discharge/connection and bill you directly pursuant City Code, Chapter 12: Stormwater Management. If the illegal discharge/connection cannot be removed immediately, you do not understand this notice, or you disagree that an illegal discharge/connection exists at your property, please contact me with further details or explanation by calling (320) 335-5004 or by email at tim.schoonhoven@wsn.us.com.

Sincerely,

Tim Schoonhoven
City of Alexandria
City Engineer
704 Broadway Street
Alexandria, MN 56308

Enclosure (photographs)
Cc:

Section V.
Appendices

Minnesota Pollution Control Agency

GENERAL PERMIT
AUTHORIZATION TO DISCHARGE STORMWATER
ASSOCIATED WITH SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS
UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION
SYSTEM/STATE DISPOSAL SYSTEM (NPDES/SDS) PERMIT PROGRAM

EFFECTIVE DATE: August 1, 2013 **EXPIRATION DATE: July 31, 2018**

In compliance with the provisions of the federal Clean Water Act (CWA), as amended, (33 U.S.C. 1251 et seq); 40 CFR Parts 122, 123, and 124, as amended; Minnesota Statutes Chapters 115 and 116, as amended; and Minnesota Rules Chapter 7001 and 7090.

This permit establishes conditions for discharging **stormwater** and specific other related discharges to **waters of the state.** This permit is required for discharges that are from **small Municipal Separate Storm Sewer Systems (small MS4),** as defined in this permit.

Applicants who submit a complete application in accordance with the requirements of Part II of this permit, and that receive written notification of permit coverage from the **Commissioner**, are authorized to discharge **stormwater** from **small MS4**s under the terms and conditions of this permit.

This permit shall become effective on the date identified above, and supersedes the previous **general permit** MNR040000, with an expiration date of May 31, 2011.

Signature: _____ Date May 22, 2013
John Linc Stine
Commissioner
Minnesota Pollution Control Agency

If you have questions on this permit, including the specific permit requirements, permit reporting or permit compliance status, please contact the appropriate Minnesota Pollution Control **Agency** offices.

Municipal Stormwater Program
Municipal Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194
Telephone: 651-296-6300 or toll free in Minnesota: 800-657-3864

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PART I. AUTHORIZATION UNDER THIS PERMIT

A. Eligibility

To be eligible for authorization to discharge **stormwater** under this permit, the applicant must be an **owner** and/or **operator** (**owner/operator**) of a **small MS4** and meet one or more of the criteria requiring permit issuance as specified in Minn. R. 7090.1010.

1. Authorized **Stormwater** Discharges

This permit authorizes **stormwater** discharges from **small MS4s** as defined in 40 CFR § 122.26(b)(16).

2. Authorized **Non-Stormwater Discharge**s

The following categories of **non-stormwater discharge**s or flows are authorized under this permit to enter the **permittee**'s **small MS4** only if the **permittee** does not identify them as significant contributors of pollutants (i.e., **illicit discharge**s), in which case the discharges or flows shall be addressed in the **permittee**'s **SWPPP**: water line flushing, landscape irrigation, diverted stream flows, rising groundwaters, uncontaminated groundwater infiltration (as defined at 40 CFR § 35.2005(b)(20)), uncontaminated pumped groundwater, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and **wetlands**, dechlorinated swimming pool discharges, street wash water, and discharges or flows from firefighting activities.

B. Limitations on Authorization

The following discharges or activities are not authorized by this permit:

1. **Non-stormwater discharge**s, except those authorized in Part I.A.2.

2. Discharges of **stormwater** to the **small MS4** from activities requiring a separate NPDES/SDS permit. This permit does not replace or satisfy any other permitting requirements.

3. Discharges of **stormwater** to the **small MS4** from any other entity located in the drainage area or outside the drainage area. Only the **permittee**'s **small MS4** and the portions of the storm sewer system that are under the **permittee**'s operational control are authorized by this permit.

4. This permit does not replace or satisfy any environmental review requirements, including those under the Minnesota Environmental Policy Act (Minn. Stat. § 116D), or the National Environmental Policy Act (42 U.S.C. §§ 4321 - 4370 f).

5. This permit does not replace or satisfy any review requirements for endangered or threatened species, from new or expanded discharges that adversely impact or contribute to adverse impacts on a listed endangered or threatened species, or adversely modify a designated critical habitat.

6. This permit does not replace or satisfy any review requirements for historic places or archeological sites, from new or expanded discharges which adversely affect properties listed or eligible for listing in the National Register of Historic Places or affecting known or discovered archeological sites.

7. Prohibited discharges pursuant to Minn. R. 7050.0180, subp. 3, 4, and 5.

C. Permit Authorization

In order for an applicant to be authorized to discharge **stormwater** from a **small MS4** under this permit:

1. The applicant shall submit a complete application to discharge **stormwater** under this permit in accordance with Part II.

2. The **Commissioner** shall review the permit application for completeness and compliance with this permit.

   a. If an application is determined to be incomplete, the **Commissioner** will notify the applicant in writing, indicate why the application is incomplete, and request that the applicant resubmit the application.
   b. If an application is determined to be complete, the **Commissioner** shall make a preliminary determination as to whether the permit should be issued or denied in accordance with Minn. R. 7001.

3. The **Commissioner** shall provide public notice with the opportunity for a hearing on the preliminary determination.

4. Upon receipt of written notification of final approval of the application from the **Commissioner**, the applicant is authorized to discharge **stormwater** from the **small MS4** under the terms and conditions of this permit.

D. Transfer of Ownership or Control

Where the ownership or significant operational control of the **small MS4** changes after the submittal of an application under Part II, the new **owner/operator** must submit a new application in accordance with Part II.

E. Issuance of Individual Permits

1. The permit applicant may request an individual permit in accordance with Minn. R. 7001.0210, subp.6, for authorization to discharge **stormwater** associated with a **small MS4.**

2. The **Commissioner** may require an individual permit for the permit applicant or **permittee** covered by a **general permit**, in accordance with Minn. R. 7001.0210, subp. 6.

F. Rights and Responsibilities

1. The **Commissioner** may modify this permit or issue other permits, in accordance with Minn. R. 7001, to include more stringent effluent limitations or permit requirements that modify

or are in addition to the MCMs in Part III.D of this permit, or both. These modifications may be based on the **Commissioner**'s determination that such modifications are needed to protect water quality.

2. The **Commissioner** may designate additional **small MS4s** for coverage under this permit in accordance with Minn. R. 7090. The **owner/operator** of a **small MS4** that is designated for coverage must comply with the permit requirements by the dates specified in the **Commissioner**'s determination.

PART II. APPLICATION REQUIREMENTS

A. Application for Reauthorization

If a permit has been issued by the **Agency** and the **permittee** holding the permit desires to continue the permitted activity beyond the expiration date of the permit, the **permittee** shall submit a written application for permit reissuance at least 180 days before the expiration date of the existing permit. (Minn. R. 7001.0040, subp.3).

B. **New Permittee** Applicants

To become a **new permittee** authorized to discharge **stormwater** under this permit, the **owner/operator** of a **small MS4** shall submit an application, on a form provided by the **Commissioner**, in accordance with the schedule in Appendix A, Table 3, and the following requirements:

1. Submit Part 1 of the permit application (includes the permit application fee).

2. Submit Part 2 of the permit application, with the **Stormwater Pollution Prevention Program (SWPPP)** document completed in accordance with Part II.D.

C. **Existing Permittee** Applicants

All **existing permittee**s seeking to continue discharging **stormwater** associated with a **small MS4** after the **effective date** of this permit shall submit Part 2 of the permit application, on a form provided by the **Commissioner**, in accordance with the schedule in Appendix A, Table 1, with the **SWPPP** document completed in accordance with Part II.D. NOTE: **Existing permittee**s were required to submit Part 1 of the permit application prior to the expiration date (May 31, 2011) of the **Agency**'s ***small MS4 general permit*** *No.MNR040000,* effective June 1, 2006, (see Part II.A above).

D. **Stormwater Pollution Prevention Program (SWPPP)** Document

All applicants shall submit a **SWPPP** document with Part 2 of the application form when seeking coverage under this permit. The **SWPPP** document shall become an enforceable part of this permit upon approval by the **Commissioner**. Modifications to the **SWPPP** document that are required or allowed by this permit (see Part III.G) shall also become enforceable provisions. The **SWPPP** document shall be submitted on a form provided by the **Commissioner** and shall include the following:

1. A description of partnerships with another regulated **small MS4**(s), into which the applicant has entered, in order to satisfy one or more requirements of this permit.

2. A description of all Regulatory Mechanism(s) (e.g., contract language, an ordinance, permits, standards, etc.) the applicant has developed, implemented, and enforced that satisfies the requirements of each program specified under Part III.D.3, 4, and 5. The description shall include the type(s) of Regulatory Mechanism(s) the applicant has in place at the time of application that will be used to satisfy the requirements. If the Regulatory Mechanism(s) have not been developed at the time of application (e.g., **new permittee** applicants), or revised to meet new requirements of this permit (e.g., **existing permittee** applicants); the

applicant shall describe tasks and corresponding schedules necessary to satisfy the permit requirements in accordance with the schedule in Appendix A, Table 2 (**existing permittee** applicants), or Table 3 (**new permittee** applicants).

3. A description of existing Enforcement Response Procedures (ERPs) the applicant has developed and implemented that satisfy the requirements of Part III.B.1. If the applicant has not yet developed ERPs (e.g., **new permittee** applicants), or existing ERPs must be updated to satisfy new requirements, the description must include tasks and corresponding schedules necessary to satisfy the permit requirements in accordance with the schedule in Appendix A, Table 2 (**existing permittee** applicants), or Table 3 (**new permittee** applicants).

4. A description of the status of the applicant's storm sewer system map and inventory as required by Part III.C. The description must indicate whether each requirement of Part III.C.1, is satisfied, and for Part III.C.2, is complete, at the time of application. For each requirement of Part III.C that is not satisfied at the time of application, the applicant shall include tasks and corresponding schedules necessary to satisfy the mapping and inventory requirements in accordance with the schedule in Appendix A, Table 2 (**existing permittee** applicants), or Table 3 (**new permittee** applicants).

5. For each Minimum Control Measure (MCM) outlined in Part III.D:

   a. The **Best Management Practices** (**BMP**s) the applicant will implement, or has implemented, for each MCM.
   b. The measurable goals for each of the **BMP**s identified in Part II.D.5.a, including as appropriate, the months and years in which the applicant will undertake required actions, including interim milestones and the frequency of the action, in narrative or numeric form, as appropriate.
   c. Name(s) of individual(s) or position titles responsible for implementing and/or coordinating each component of the MCM.

6. For each **applicable Waste Load Allocation (WLA)** approved prior to the **effective date** of this permit, the applicant shall submit the following information as part of the **SWPPP** document:

   a. **TMDL** project name(s)
   b. Numeric **WLA**(s), including units
   c. Type of **WLA** (i.e., categorical or individual)
   d. **Pollutant**(s) **of concern**
   e. Applicable flow data specific to each **applicable WLA**
   f. For each **applicable WLA** not met at the time of application, a compliance schedule is required. Compliance schedules can be developed to include multiple **WLA**s associated with a **TMDL** project and shall include:

      (1) Interim milestones, expressed as **BMP**s or progress toward implementation of **BMP**s to be achieved during the term of this permit
      (2) Dates for implementation of interim milestones
      (3) Strategies for continued **BMP** implementation beyond the term of this permit
      (4) Target dates the **applicable WLA**(s) will be achieved

g. For each **applicable WLA** the **permittee** is reasonably confident is being met at the time of application, the **permittee** must provide the following documentation:

   (1) Implemented **BMPs** used to meet each **applicable WLA**
   (2) A narrative describing the **permittee**'s strategy for long-term continuation of meeting each **applicable WLA**.

7. For the requirements of Part III.F, **Alum or Ferric Chloride Phosphorus Treatment System**s, if applicable, the applicant shall submit the following:

   a. **Geographic coordinate**s of the system
   b. Name(s) of individual(s) or position titles responsible for the operation of the system
   c. Information listed in Part III.F.3.a(1)-(6), if the system is constructed at the time the application is submitted to the **Agency**
   d. Indicate if the system complies with the requirements of Part III.F
   e. If applicable, for each Part III.F requirement that the applicant's system does not comply with at the time of application, describe tasks and corresponding schedules necessary to bring the system into compliance in accordance with the schedule in Appendix A, Table 2 (**existing permittee** applicants), or Table 3 (**new permittee** applicants).

PART III. **STORMWATER POLLUTION PREVENTION PROGRAM (SWPPP)**

The **permittee** shall develop, implement, and enforce a **SWPPP** designed to **reduce** the discharge of pollutants from the **small MS4** to the **Maximum Extent Practicable** (**MEP**), to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act.

If the **permittee** enters into a partnership for purposes of meeting **SWPPP** requirements, the **permittee** maintains legal responsibility for compliance with this permit.

Existing permittees shall revise their **SWPPP** developed under the **Agency**'s ***small MS4 general permit*** *No.MNR040000* that was effective June, 1, 2006, to meet the requirements of this permit in accordance with the schedule in Appendix A, Table 2. **New permittee**s shall develop, implement, and enforce their **SWPPP** in accordance with the schedule in Appendix A, Table 3. The **permittee**'s **SWPPP** shall consist of the following:

A. Regulatory Mechanism(s)

To the extent allowable under state, tribal or local law, the **permittee** shall develop, implement, and enforce a Regulatory Mechanism(s) to meet the terms and conditions of Part III.D.3, 4, and 5. A Regulatory Mechanism(s) for the purposes of this permit may consist of contract language, an ordinance, permits, standards, or any other mechanism, that will be enforced by the **permittee**.

B. Enforcement Response Procedures (ERPs)

1. The **permittee** shall develop and implement written ERPs to enforce and compel compliance with the Regulatory Mechanism(s) developed and implemented by the **permittee** in accordance with Part III.A.

2. Enforcement conducted by the **permittee** pursuant to the ERPs shall be documented. Documentation shall include, at a minimum, the following:

   a. Name of the **person** responsible for violating the terms and conditions of the **permittee**'s Regulatory Mechanism(s)
   b. Date(s) and location(s) of the observed violation(s)
   c. Description of the violation(s), including reference(s) to relevant Regulatory Mechanism(s)
   d. Corrective action(s) (including completion schedule) issued by the **permittee**
   e. Date(s) and type(s) of enforcement used to compel compliance (e.g., written notice, citation, stop work order, withholding of local authorizations, etc.)
   f. Referrals to other regulatory organizations (if any)
   g. Date(s) violation(s) resolved

C. Mapping and Inventory

1. Mapping

New permittees shall develop, and **existing permittee**s shall update, a storm sewer system map that depicts the following:

a. The **permittee's** entire **small MS4** as a goal, but at a minimum, all **pipe**s 12 inches or greater in diameter, including **stormwater flow direction** in those **pipe**s
b. **Outfall**s, including a unique identification (ID) number assigned by the **permittee**, and an associated **geographic coordinate**
c. **Structural stormwater BMP**s that are part of the **permittee**'s **small MS4**
d. All **receiving water**s

2. Inventory (2009 Minnesota Session Law, Ch. 172. Sec. 28).

a. The **permittee** shall complete an inventory of:

(1) All ponds within the **permittee**'s jurisdiction that are constructed and operated for purposes of water quality treatment, **stormwater** detention, and flood control, and that are used for the collection of **stormwater** via constructed conveyances. **Stormwater** ponds do not include areas of temporary ponding, such as ponds that exist only during a construction project or short-term accumulations of water in road ditches.
(2) All **wetland**s and lakes, within the **permittee**'s jurisdiction, that collect **stormwater** via constructed conveyances.

b. **The permittee** shall complete and submit the inventory to the **Agency** on a form provided by the **Commissioner**. Each feature inventoried shall include the following information:

(1) A unique identification (ID) number assigned by the **permittee**
(2) A **geographic coordinate**
(3) Type of feature (e.g., pond, **wetland**, or lake). This may be determined by using best professional judgment.

D. Minimum Control Measures (MCMs)

The **permittee** shall incorporate the following six MCMs into the **SWPPP**. The **permittee** shall document as part of the **SWPPP**, a description of **BMP**s used for each MCM, the responsible **person**(s) and department(s) in charge, an implementation schedule, and measureable goals that will be used to determine the success of each **BMP**.

1. Public Education and Outreach

New permittees shall develop and implement, and **existing permittee**s shall revise their current program, as necessary, and continue to implement, a public education program to distribute educational materials or equivalent outreach that informs the public of the impact **stormwater** discharges have on water bodies and that includes actions citizens, businesses, and other local organizations can take to **reduce** the discharge of pollutants to **stormwater**. The program shall also include:

a. Distribution of educational materials or equivalent outreach focused on:

(1) Specifically selected **stormwater**-related issue(s) of high priority to the **permittee** to be emphasized during this permit term (e.g., specific **TMDL** reduction targets, changing local business practices, promoting adoption of residential **BMP**s, lake

improvements through lake associations, responsible management of pet waste, household chemicals, yard waste, deicing materials, etc.)

(2) **Illicit discharge** recognition and reporting **illicit discharge**s to the **permittee**

b. An implementation plan that consists of the following:

(1) Target audience(s), including measurable goals for each audience
(2) Responsible **Person**(s) in charge of overall plan implementation
(3) Specific activities and schedules to reach measurable goals for each target audience
(4) A description of any coordination with and/or use of other **stormwater** education and outreach programs being conducted by other entities, if applicable
(5) Annual evaluation to measure the extent to which measurable goals for each target audience are attained

c. Documentation of the following information:

(1) A description of any specific **stormwater**-related issues identified by the **permittee** under Part III.D.1.a(1)
(2) All information required under Part III.D.1.b
(3) Any modifications made to the program as a result of the annual evaluation under Part III.D.1.b(5)
(4) Activities held, including dates, to reach measurable goals
(5) Quantities and descriptions of educational materials distributed, including dates distributed

2. Public Participation/Involvement

a. **New permittee**s shall develop and implement, and **existing permittee**s shall revise their current program, as necessary, and continue to implement, a Public Participation/Involvement program to solicit public input on the **SWPPP**. The **permittee** shall:

(1) Provide a minimum of one (1) opportunity annually for the public to provide input on the adequacy of the **SWPPP**. Public meetings can be conducted to satisfy this requirement provided appropriate local public notice requirements are followed and opportunity to review and comment on the **SWPPP** is provided.
(2) Provide access to the **SWPPP** document, Annual Reports, and other documentation that supports or describes the **SWPPP** (e.g., Regulatory Mechanism(s), etc.) for public review, upon request. All public data requests are subject to the Minnesota Government Data Practices Act, Minn. Stat. § 13.
(3) Consider public input, oral and written, submitted by the public to the **permittee**, regarding the **SWPPP**.

b. Document the following information:

(1) All relevant written input submitted by **person**s regarding the **SWPPP**
(2) All responses from the **permittee** to written input received regarding the **SWPPP**, including any modifications made to the **SWPPP** as a result of the written input received

(3) Date(s) and location(s) of events held for purposes of compliance with this requirement
(4) Notices provided to the public of any events scheduled to meet this requirement, including any electronic correspondence (e.g., website, e-mail distribution lists, notices, etc.)

3. **Illicit Discharge** Detection and Elimination (IDDE)

New permittees shall develop, implement, and enforce, and **existing permittee**s shall revise their current program as necessary, and continue to implement and enforce, a program to detect and eliminate **illicit discharge**s into the **small MS4**. The IDDE program shall consist of the following:

a. Map of the **small MS4** as required by Part III.C.1.
b. Regulatory Mechanism(s) that effectively prohibits **non-stormwater discharge**s into the **small MS4**, except those **non-stormwater discharge**s authorized under Part I.B.1.
c. Incorporation of **illicit discharge** detection into all inspection and maintenance activities conducted under Part III.D.6.e and f. Where feasible, **illicit discharge** inspections shall be conducted during dry-weather conditions (e.g., periods of 72 or more hours of no precipitation).
d. Detecting and tracking the source of **illicit discharge**s using visual inspections. The **permittee** may also include the use of mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures that may be effective investigative tools.
e. Training of all field staff, in accordance with the requirements of Part III.D.6.g(2), in **illicit discharge** recognition (including conditions which could cause **illicit discharge**s), and reporting **illicit discharge**s for further investigation.
f. Identification of priority areas likely to have **illicit discharge**s, including at a minimum, evaluating land uses associated with business/industrial activities, areas where **illicit discharge**s have been identified in the past, and areas with storage of large quantities of **significant materials** that could result in an **illicit discharge**. Based on this evaluation, the **permittee** shall conduct additional **illicit discharge** inspections in those areas identified as having a higher likelihood for **illicit discharge**s.
g. For timely response to known, suspected, and reported **illicit discharge**s:

(1) Procedures for investigating, locating, and eliminating the source of **illicit discharge**s.
(2) Procedures for responding to spills, including emergency response procedures to prevent spills from entering the **small MS4**. The procedures shall also include the immediate notification of the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the source of the **illicit discharge** is a spill or leak as defined in Minn. Stat. § 115.061.
(3) When the source of the **illicit discharge** is found, ERPs required by Part III.B (if necessary) to eliminate the **illicit discharge** and require any needed corrective action(s).

h. Documentation of the following information:

(1) Date(s) and location(s) of IDDE inspections conducted in accordance with Part III.D.3.c and f
(2) Reports of alleged **illicit discharge**s received, including date(s) of the report(s), and any follow-up action(s) taken by the **permittee**
(3) Date(s) of discovery of all **illicit discharge**s
(4) Identification of **outfall**s, or other areas, where **illicit discharges** have been discovered
(5) Sources (including a description and the responsible party) of **illicit discharges** (if known)
(6) Action(s) taken by the **permittee**, including date(s), to address discovered **illicit discharges**

4. Construction Site **Stormwater** Runoff Control

New permittees shall develop, implement, and enforce, and **existing permittee**s shall revise their current program, as necessary, and continue to implement and enforce, a Construction Site **Stormwater** Runoff Control program that **reduce**s pollutants in **stormwater** runoff to the **small MS4** from **construction activity** with a land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger **common plan of development or sale**, that occurs within the **permittee**'s jurisdiction. The program shall incorporate the following components:

a. Regulatory Mechanism(s)

A Regulatory Mechanism(s) that establishes requirements for erosion and sediment controls and waste controls that is at least as stringent as the **Agency's *general permit*** *to Discharge Stormwater Associated with Construction Activity No.MN R100001* (as of the **effective date** of this permit). The **permittee**'s Regulatory Mechanism(s) shall require that owners and operators of **construction activity** develop site plans that must be submitted to the **permittee** for review and approval, prior to the start of **construction activity**. Site plans must be kept up-to-date by the owners and operators of **construction activity** with regard to **stormwater** runoff controls. The Regulatory Mechanism(s) must require that site plans incorporate the following erosion and sediment controls and waste controls as described in the above referenced permit:

(1) **BMPs** to minimize erosion
(2) **BMP**s to minimize the discharge of sediment and other pollutants
(3) **BMP**s for dewatering activities
(4) Site inspections and records of rainfall events
(5) **BMP** maintenance
(6) Management of solid and hazardous wastes on each project site
(7) Final stabilization upon the completion of **construction activity**, including the use of perennial vegetative cover on all exposed soils or other equivalent means
(8) Criteria for the use of temporary sediment basins

b. Site plan review

The program shall include written procedures for site plan reviews conducted by the **permittee** prior to the start of **construction activity**, to ensure compliance with requirements of the Regulatory Mechanism(s). The site plan review procedure shall include notification to owners and operators proposing **construction activity** of the need to apply for and obtain coverage under the **Agency**'s ***general permit*** *to Discharge Stormwater Associated with Construction Activity No.MN R100001.*

c. Public input

The program shall include written procedures for receipt and consideration of reports of noncompliance or other **stormwater** related information on **construction activity** submitted by the public to the **permittee.**

d. Site inspections

The program shall include written procedures for conducting site inspections, to determine compliance with the **permittee**'s Regulatory Mechanism(s). The written procedures shall:

(1) Include procedures for identifying priority sites for inspection. Prioritization can be based on such parameters as topography, soil characteristics, type of **receiving water**(s), stage of construction, compliance history, weather conditions, or other local characteristics and issues.
(2) Identify frequency at which site inspections will be conducted
(3) Identify name(s) of individual(s) or position titles responsible for conducting site inspections
(4) Include a checklist or other written means to document site inspections when determining compliance.

e. ERPs required by Part III.B of this permit

f. Documentation of the following information:

(1) For each site plan review – The project name, location, total acreage to be disturbed, owner and operator of the proposed **construction activity**, and any **stormwater** related comments and supporting documentation used by the **permittee** to determine project approval or denial.
(2) For each site inspection - Inspection checklists or other written means used to document site inspections

5. Post-Construction **Stormwater** Management

New permittees shall develop, implement, and enforce, and **existing permittees** shall revise their current program, as necessary, and continue to implement and enforce, a Post-Construction **Stormwater** Management program that prevents or **reduces water pollution** after **construction activity** is completed, related to **new development** and **redevelopment** projects with land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger **common plan of development or sale**, within the **permittee**'s jurisdiction and that discharge to the **permittee**'s **small MS4**. The program shall consist, at a minimum, of the following:

a. A Regulatory Mechanism(s) that incorporates:

(1) A requirement that owners and/or operators of **construction activity** submit site plans with post-construction **stormwater** management **BMPs** to the **permittee** for review and approval, prior to start of **construction activity**

(2) Conditions for Post-Construction **Stormwater** Management:

The **permittee** shall develop and implement a Post-Construction **Stormwater** Management program that requires the use of any combination of **BMPs**, with highest preference given to **Green Infrastructure** techniques and practices (e.g., infiltration, evapotranspiration, reuse/harvesting, conservation design, urban forestry, green roofs, etc.), necessary to meet the following conditions on the site of a **construction activity** to the **MEP**:

(a) For **new development** projects – no net increase from pre-project conditions (on an annual average basis) of:

1) **Stormwater** discharge Volume, unless precluded by the **stormwater** management limitations in Part III.D.5.a(3)(a)
2) **Stormwater** discharges of Total Suspended Solids (TSS)
3) **Stormwater** discharges of Total Phosphorus (TP)

(b) For **redevelopment** projects – a net reduction from pre-project conditions (on an annual average basis) of:

1) **Stormwater** discharge Volume, unless precluded by the **stormwater** management limitations in Part III.D.5.a(3)(a)
2) **Stormwater** discharges of TSS
3) **Stormwater** discharges of TP

(3) **Stormwater** management limitations and exceptions

(a) Limitations

1) The **permittee**'s Regulatory Mechanism(s) shall prohibit the use of infiltration techniques to achieve the conditions for post-construction **stormwater** management in Part III.D.5.a(2) when the infiltration **structural stormwater BMP** will receive discharges from, or be constructed in areas:

a) Where industrial facilities are not authorized to infiltrate industrial **stormwater** under an **NPDES/SDS** Industrial **Stormwater** Permit issued by the **Agency**
b) Where vehicle fueling and maintenance occur
c) With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally **saturated soil**s or the top of bedrock
d) Where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating **stormwater**

2) The **permittee**'s Regulatory Mechanism(s) shall restrict the use of infiltration techniques to achieve the conditions for post-construction **stormwater** management, without higher engineering review, sufficient to provide a functioning treatment system and prevent adverse impacts to groundwater, when the infiltration device will be constructed in areas:

a) With predominately Hydrologic Soil Group D (clay) soils
b) Within 1,000 feet up-gradient, or 100 feet down-gradient of **active karst** features
c) Within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13
d) Where soil infiltration rates are more than 8.3 inches per hour

3) For linear projects where the lack of right-of-way precludes the installation of volume control practices that meet the conditions for post-construction **stormwater** management in Part.III.D.5.a(2), the **permittee**'s Regulatory Mechanism(s) may allow exceptions as described in Part III.D.5.a(3)(b). The **permittee**'s Regulatory Mechanism(s) shall ensure that a reasonable attempt be made to obtain right-of-way during the project planning process.

(b) Exceptions for **stormwater** discharge volume

The **permittee**'s Regulatory Mechanism(s) may allow for lesser volume control on the site of the original **construction activity** than that in Part III.D.5.a(2) only under the following circumstances:

1) The owner and/or operator of a **construction activity** is precluded from infiltrating **stormwater** through a designed system due to any of the infiltration related limitations described above, and
2) The owner and/or operator of the **construction activity** implements, to the **MEP**, volume reduction techniques, other than infiltration, (e.g., evapotranspiration, reuse/harvesting, conservation design, green roofs, etc.) on the site of the original **construction activity** that **reduce**s **stormwater** discharge volume, but may not meet the conditions for post-construction **stormwater** management in Part III.D.5.a(2).

(4) Mitigation provisions

There may be circumstances where the **permittee** or other owners and operators of a **construction activity** cannot cost effectively meet the conditions for post-construction **stormwater** management for TSS and/or TP in Part III.D.5.a(2) on the site of the original **construction activity**. For this purpose, the **permittee** shall identify, or may require owners or operators of a **construction activity** to identify, locations where mitigation projects can be completed. The **permittee**'s Regulatory Mechanism(s) shall ensure that any **stormwater** discharges of TSS and/or TP not addressed on the site of the original **construction activity** are addressed through mitigation and, at a minimum, shall ensure the following requirements are met:

(a) Mitigation project areas are selected in the following order of preference:
   1) Locations that yield benefits to the same **receiving water** that receives runoff from the original **construction activity**
   2) Locations within the same Department of Natural Resource (**DNR**) **catchment area** as the original **construction activity**
   3) Locations in the next adjacent **DNR catchment area** up-stream
   4) Locations anywhere within the **permittee**'s jurisdiction
(b) Mitigation projects must involve the creation of new **structural stormwater BMP**s or the retrofit of existing **structural stormwater BMP**s, or the use of a properly designed regional **structural stormwater BMP**.
(c) Routine maintenance of **structural stormwater BMP**s already required by this permit cannot be used to meet mitigation requirements of this Part.
(d) Mitigation projects shall be completed within 24 months after the start of the original **construction activity**.
(e) The **permittee** shall determine, and document, who is responsible for long-term maintenance on all mitigation projects of this Part.
(f) If the **permittee** receives payment from the owner and/or operator of a **construction activity** for mitigation purposes in lieu of the owner or operator of that **construction activity** meeting the conditions for post-construction **stormwater** management in Part III.D.5.a(2), the **permittee** shall apply any such payment received to a public **stormwater** project, and all projects must be in compliance with Part III.D.5.a(4)(a)-(e).

(5) Long-term maintenance of **structural stormwater BMP**s

The **permittee**'s Regulatory Mechanism(s) shall provide for the establishment of legal mechanism(s) between the **permittee** and owners or operators responsible for the long-term maintenance of **structural stormwater BMP**s not owned or operated by the **permittee**, that have been implemented to meet the conditions for post-construction **stormwater** management in Part III.D.5.a(2). This only includes **structural stormwater BMPs** constructed after the **effective date** of this permit, that are directly connected to the **permittee**'s **MS4**, and that are in the **permittee**'s jurisdiction. The legal mechanism shall include provisions that, at a minimum:

(a) Allow the **permittee** to conduct inspections of **structural stormwater BMP**s not owned or operated by the **permittee**, perform necessary maintenance, and assess costs for those **structural stormwater BMP**s when the **permittee**

determines that the owner and/or operator of that **structural stormwater BMP** has not conducted maintenance.

(b) Include conditions that are designed to preserve the **permittee**'s right to ensure maintenance responsibility, for **structural stormwater BMP**s not owned or operated by the **permittee**, when those responsibilities are legally transferred to another party.

(c) Include conditions that are designed to protect/preserve **structural stormwater BMP**s and site features that are implemented to comply with Part III.D.5.a(2). If site configurations or **structural stormwater BMP**s change, causing decreased **structural stormwater BMP** effectiveness, new or improved **structural stormwater BMP**s must be implemented to ensure the conditions for post-construction **stormwater** management in Part III.D.5.a(2) continue to be met.

b. Site plan review

The program shall include written procedures for site plan reviews conducted by the **permittee** prior to the start of **construction activity**, to ensure compliance with requirements of the Regulatory Mechanism(s).

c. Documentation of the following information:

(1) Any supporting documentation used by the **permittee** to determine compliance with Part III.D.5.a, including the project name, location, owner and operator of the **construction activity**, any checklists used for conducting site plan reviews, and any calculations used to determine compliance
(2) All supporting documentation associated with mitigation projects authorized by the **permittee**
(3) Payments received and used in accordance with Part III.D.5.a(4)(f)
(4) All legal mechanisms drafted in accordance with Part III.D.5.a(5), including date(s) of the agreement(s) and name(s) of all responsible parties involved

6. Pollution Prevention/Good Housekeeping For Municipal Operations

New permittees shall develop and implement, and **existing permittee**s shall revise their current program, as necessary, and continue to implement, an operations and maintenance program that prevents or **reduce**s the discharge of pollutants from **permittee** owned/operated facilities and operations to the **small MS4**. The operations and maintenance program shall include, at a minimum, the following:

a. Facilities Inventory

The **permittee** shall develop and maintain an inventory of **permittee** owned/operated facilities that contribute pollutants to **stormwater** discharges. Facilities to be inventoried may include, but is not limited to: composting, equipment storage and maintenance, hazardous waste disposal, hazardous waste handling and transfer; landfills, solid waste handling and transfer, parks, pesticide storage, public parking lots, public golf courses; public swimming pools, public works yards, recycling, salt storage, vehicle storage and maintenance (e.g., fueling and washing) yards, and materials storage yards.

b. Development and Implementation of **BMP**s for inventoried facilities and municipal operations

Considering the source of pollutants and sensitivity of **receiving water**s (e.g., Outstanding Resource Value Waters (ORVWs), **impaired water**s, trout streams, etc.), the **permittee** shall develop and implement **BMP**s that prevent or **reduce** pollutants in **stormwater** discharges from the **small MS4** and from:

(1) All inventoried facilities that discharge to the **MS4**, and
(2) The following municipal operations that may contribute pollutants to **stormwater** discharges, where applicable:

(a) Waste disposal and storage, including dumpsters
(b) Management of temporary and permanent stockpiles of materials such as street sweepings, snow, deicing materials (e.g., salt), sand and sediment removal piles
(c) Vehicle fueling, washing and maintenance
(d) Routine street and parking lot sweeping
(e) Emergency response, including spill prevention plans
(f) Cleaning of maintenance equipment, building exteriors, dumpsters, and the disposal of associated waste and wastewater
(g) Use, storage, and disposal of **significant materials**
(h) Landscaping, park, and lawn maintenance
(i) Road maintenance, including pothole repair, road shoulder maintenance, pavement marking, sealing, and repaving
(j) Right-of-way maintenance, including mowing
(k) Application of herbicides, pesticides, and fertilizers
(l) Cold-weather operations, including plowing or other snow removal practices, sand use, and application of deicing compounds

c. Development and implementation of **BMP**s for **MS4** discharges that may affect Source Water Protection Areas (Minn. R. 4720.5100-4720.5590)

The **permittee** shall incorporate **BMP**s into the **SWPPP** to protect any of the following drinking water sources that the **MS4** discharge may affect, and the **permittee** shall include the map of these sources with the **SWPPP** if they have been mapped:

(1) Wells and source waters for DWSMAs identified as vulnerable under Minn. R. 4720.5205, 4720.5210, and 4720.5330
(2) Source water protection areas for surface intakes identified in the source water assessments conducted by or for the Minnesota Department of Health (MDH) under the federal Safe Drinking Water Act, U.S.C. §§ 300j – 13

d. Pond Assessment Procedures and Schedule

The **permittee** shall develop procedures and a schedule for the purpose of determining the TSS and TP treatment effectiveness of all **permittee** owned/operated ponds constructed and used for the collection and treatment of **stormwater**. The schedule (which may exceed this permit term) shall be based on measureable goals and priorities established by the **permittee**.

e. Inspections

(1) Unless inspection frequency is adjusted as described below, the **permittee** shall conduct annual inspections of **structural stormwater BMPs** (excluding **stormwater** ponds which are under a separate schedule below) to determine structural integrity, proper function and maintenance needs.

Inspections of **structural stormwater BMP**s shall be conducted annually unless the **permittee** determines if either of the following conditions apply: 1) Complaints received or patterns of maintenance indicate a greater frequency is necessary, or 2) Maintenance or sediment removal is not required after completion of the first two annual inspections; in which case the **permittee** may reduce the frequency of inspections to once every two (2) years. However, **existing permittee**s are authorized under this permit to continue using inspection frequency adjustments, previously determined under the *general **stormwater** permit for **small MS4**s No.MNR040000*, effective June 1, 2006, provided that documentation requirements in Part III.D.6.h(2) are satisfied.

(2) Prior to the expiration date of this permit, the **permittee** shall conduct at least one inspection of all ponds and **outfall**s (excluding underground **outfall**s) in order to determine structural integrity, proper function, and maintenance needs.

(3) The **permittee** shall conduct quarterly inspections of stockpiles, and storage and material handling areas as inventoried in Part III.D.6.a, to determine maintenance needs and proper function of **BMP**s.

f. Maintenance

Based on inspection findings, the **permittee** shall determine if repair, replacement, or maintenance measures are necessary in order to ensure the structural integrity, proper function, and treatment effectiveness of **structural stormwater BMP**s. Necessary maintenance shall be completed as soon as possible to prevent or **reduce** the discharge of pollutants to **stormwater**.

g. Employee Training

The **permittee** shall develop and implement a **stormwater** management training program commensurate with employee's job-duties as they relate to the **permittee**'s **SWPPP**, including reporting and assessment activities. The **permittee** may use training materials from the United States Environmental Protection Agency (USEPA), state and regional agencies, or other organizations as appropriate to meet this requirement. The employee training program shall:

(1) Address the importance of protecting water quality
(2) Cover the requirements of the permit relevant to the job duties of the employee
(3) Include a schedule that establishes initial training for new and/or seasonal employees, and recurring training intervals for existing employees to address changes in procedures, practices, techniques, or requirements

h. Documentation of the following information:

(1) Date(s) and description of findings of all inspections conducted in accordance with Part III.D.6.e
(2) Any adjustments to inspection frequency as authorized under Part III.D.6.e(1)
(3) A description of maintenance conducted, including dates, as a result of inspection findings
(4) Pond sediment excavation and removal activities, including:
  (a) The unique ID number (consistent with that required in Part III.C.2.a) of each **stormwater** pond from which sediment is removed
  (b) The volume (e.g., cubic yards) of sediment removed from each **stormwater** pond
  (c) Results from any testing of sediment from each removal activity
  (d) Location(s) of final disposal of sediment from each **stormwater** pond
(5) Employee **stormwater** management training events, including a list of topics covered, names of employees in attendance, and date of each event

E. Discharges to **Impaired Water**s with a USEPA-Approved **TMDL** that Includes an **Applicable WLA**

For each **applicable WLA** approved prior to the **effective date** of this permit, the **BMPs** included in the compliance schedule at application constitute a discharge requirement for the **permittee**. The **permittee** shall demonstrate continuing progress toward meeting each discharge requirement, on a form provided by the **Commissioner**, by submitting the following:

1. An assessment of progress toward meeting each discharge requirement, including a list of all **BMP**s being applied to achieve each **applicable WLA**. For each **structural stormwater BMP**, the **permittee** shall provide a unique identification (ID) number and **geographic coordinate**. If the listed **structural stormwater BMP** is also inventoried as required by Part III.C.2, the same ID number shall be used.

2. A list of all **BMP**s the **permittee** submitted at the time of application in the **SWPPP** document compliance schedule(s) and the stage of implementation for each **BMP**, including any **BMP**s specifically identified for the **small MS4** in the **TMDL** report that the **permittee** plans to implement

3. An up-dated estimate of the cumulative reductions in loading achieved for each **pollutant of concern** associated with each **applicable WLA**

4. An up-dated narrative describing any adaptive management strategies used (including projected dates) for making progress toward achieving each **applicable WLA**

F. Alum or Ferric Chloride Phosphorus Treatment Systems

If the **permittee** uses an **alum or ferric chloride phosphorus treatment system**, the **permittee** shall comply with the following:

1. Minimum Requirements of an **Alum or Ferric Chloride Phosphorus Treatment System**

   a. Limitations

      (1) The **permittee** shall use the treatment system for the treatment of phosphorus in **stormwater. Non-stormwater discharges** shall not be treated by this system.
      (2) The treatment system must be contained within the conveyances and **structural stormwater BMPs** of a **small MS4**. The utilized conveyances and **structural stormwater BMPs** shall not include any **receiving waters**.
      (3) Phosphorus treatment systems utilizing chemicals other than alum or ferric chloride must receive written approval from the **Agency**.
      (4) In-lake phosphorus treatment activities are not authorized under this permit.

   b. Treatment System Design

      (1) The treatment system shall be constructed in a manner that diverts the **stormwater** flow to be treated from the main conveyance system.
      (2) A **High Flow Bypass** shall be part of the inlet design.
      (3) A flocculent storage/settling area shall be incorporated into the design, and adequate maintenance access must be provided (minimum of 8 feet wide) for the removal of accumulated sediment.

2. Monitoring During Operation

   a. A designated **person** shall perform visual monitoring of the treatment system for proper performance at least once every seven (7) days, and within 24 hours after a rainfall event greater than 2.5 inches in 24 hours. Following visual monitoring which occurs within 24 hours after a rainfall event, the next visual monitoring must be conducted within seven (7) days after that rainfall event.
   b. Three benchmark monitoring stations shall be established. Table B-1 shall be used for the parameters, units of measure, and frequency of measurement for each station.
   c. Samples shall be collected as grab samples or flow-weighted 24-hour composite samples.
   d. Each sample, excluding pH samples, must be analyzed by a laboratory certified by the MDH and/or the MPCA, and:

      (1) Sample preservation and test procedures for the analysis of pollutants shall conform to 40 CFR Part 136 and Minn. R. 7041.3200.
      (2) Detection limits for dissolved phosphorus, dissolved aluminum, and dissolved iron shall be a minimum of 6 micrograms per liter (µg/L), 10 µg/L, and 20 µg/L, respectively.
      (3) pH must be measured within 15 minutes of sample collection using calibrated and maintained equipment.

Table B-1:
Monitoring Parameters During Operation

Station	Alum Parameters	Ferric Parameters	Units	Frequency
Upstream-Background	Total Phosphorus	Total Phosphorus	mg/L	1 x week
	Dissolved Phosphorus	Dissolved Phosphorus	mg/L	1 x week
	Total Aluminum	Total Iron	mg/L	1 x month
	Dissolved Aluminum	Dissolved Iron	mg/L	1 x week
	pH	pH	SU	1 x week
	Flow	Flow	Mgd	Daily
Alum or Ferric Chloride Feed	Alum	Ferric	Gallons	Daily Total Dosed In Gallons
Discharge From Treatment	Total Phosphorus	Total Phosphorus	mg/L	1 x week
	Dissolved Phosphorus	Dissolved Phosphorus	mg/L	1 x week
	Total Aluminum	Total Iron	mg/L	1 x month
	Dissolved Aluminum	Dissolved Iron	mg/L	1 x week
	pH	pH	SU	1 x week
	Flow	Flow	Mgd	Daily

e. In the following situations, the **permittee** shall perform corrective action(s) and immediately notify the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area):

(1) The pH of the discharged water is not within the range of 6.0 and 9.0
(2) Any indications of toxicity or measurements exceeding **water quality standards**
(3) A spill, as defined in Minn. Stat. § 115.01, subd. 13, of alum or ferric chloride

3. Reporting and Recordkeeping

a. Annual Reporting

The **permittee** shall submit the following information with the Annual Report in Part IV.B. The Annual Report must include a month-by-month summary of:

(1) Date(s) of operation
(2) Chemical(s) used for treatment
(3) Gallons of water treated
(4) Gallons of alum or ferric chloride treatment used
(5) Calculated pounds of phosphorus removed
(6) Any performance issues and the corrective action(s), including the date(s) when corrective action(s) were taken

b. On-Site Recordkeeping

A record of the following design parameters shall be kept on-site:

(1) Site-specific jar testing conducted using typical and representative water samples in accordance with ASTM D2035-08 (2003)
(2) Baseline concentrations of the following parameters in the influent and **receiving waters**:

(a) Aluminum or Iron
(b) Phosphorus

(3) The following system parameters and how each was determined:

(a) Flocculent settling velocity
(b) Minimum required retention time
(c) Rate of diversion of **stormwater** into the system
(d) The flow rate from the discharge of the outlet structure
(e) Range of expected dosing rates

4. Treatment System Management

The following site-specific procedures shall be developed and a copy kept on-site:

a. Procedures for the installation, operation and maintenance of all pumps, generators, control systems, and other equipment
b. Specific parameters for determining when the solids must be removed from the system and how the solids will be handled and disposed of
c. Procedures for cleaning up and/or containing a spill of each chemical stored on-site

G. **Stormwater Pollution Prevention Program (SWPPP)** Modification

1. The **Commissioner** may require the **permittee** to modify the **SWPPP** as needed, in accordance with the procedures of Minn. R. 7001, and may consider the following factors:

a. Discharges from the **small MS4** are impacting the quality of **receiving waters.**
b. More stringent requirements are necessary to comply with state or federal regulations.
c. Additional conditions are deemed necessary to comply with the goals and applicable requirements of the Clean Water Act and protect water quality.

2. Modifications that the **permittee** chooses to make to the **SWPPP** document developed under Part II.D, other than modifications authorized in Part III.G.3 below, must be approved by the **Commissioner** in accordance with the procedures of Minn. R. 7001. All requests must be in writing, setting forth schedules for compliance. The request must discuss alternative program modifications, assure compliance with requirements of the permit, and meet other applicable laws.

3. The **SWPPP** document may only be modified by the **permittee** without prior approval of the **Commissioner** provided it is in accordance with a. or b. below, and the **Commissioner** is notified of the modification in the Annual Report for the year the modification is made.

a. A **BMP** is added, and none subtracted, from the **SWPPP** document.
b. A less effective **BMP** identified in the **SWPPP** document is replaced with a more effective **BMP**. The alternate **BMP** shall address the same, or similar, concerns as the ineffective or failed **BMP**.

PART IV. ANNUAL **SWPPP** ASSESSMENT, ANNUAL REPORTING, AND RECORD KEEPING

A. Annual **SWPPP** Assessment

The **permittee** shall conduct an Annual Assessment of their **SWPPP** to determine program compliance, the appropriateness of **BMP**s, and progress towards achieving the measurable goals identified in their **SWPPP** document. The Annual **SWPPP** Assessment shall be performed prior to completion of each Annual Report.

B. Annual Reporting

The **permittee** shall submit an Annual Report to the **Agency** by June 30th of each calendar year. The Annual Report shall cover the portion of the previous calendar year during which the **permittee** was authorized to discharge **stormwater** under this permit. The Annual Report shall be submitted to the **Agency**, on a form provided by the **Commissioner**, that will at a minimum, consist of the following:

1. The status of compliance with permit terms and conditions, including an assessment of the appropriateness of **BMPs** identified by the **permittee** and progress towards achieving the identified measurable goals for each of the MCMs in Part III.D.1-6. The assessment must be based on results of information collected and analyzed, including monitoring (if any), inspection findings, and public input received during the reporting period.

2. The **stormwater** activities the **permittee** plans to undertake during the next reporting cycle

3. A change in any identified **BMP**s or measurable goals for any of the MCMs in Part III.D.1-6

4. Information required in Part III.E, to demonstrate progress in meeting **applicable WLA**s

5. Information required to be recorded or documented in Part III

6. A statement that the **permittee** is relying on a partnership(s) with another regulated **Small MS4**(s) to satisfy one or more permit requirements (if applicable), and what agreements the **permittee** has entered into in support of this effort

C. Record Keeping

1. The **permittee** shall keep records required by the **NPDES** permit for at least three (3) years beyond the term of this permit. The **permittee** shall submit records to the **Commissioner** only if specifically asked to do so.

2. The **permittee** shall make records, including components of the **SWPPP**, available to the public at reasonable times during regular business hours (see 40 CFR § 122.7 for confidentiality provision).

3. The **permittee** shall retain copies of the permit application, all documentation necessary to comply with **SWPPP** requirements, all data and information used by the **permittee** to complete the application process, and any information developed as a requirement of this permit or as requested by the **Commissioner**, for a period of at least three (3) years beyond the date of permit expiration. This period is automatically extended during the course of an

unresolved enforcement action regarding the **small MS4** or as requested by the **Commissioner**.

D. Where to Submit

The **permittee** shall use an electronic submittal process, when provided by the **Agency**, when submitting information required by this permit. When submitting information electronically is not possible, the **permittee** may use the following mailing address:

Minnesota Pollution Control Agency (MPCA)
Attn: WQ Submittals Center
520 Lafayette Road North
St. Paul, MN 55155-4194

PART V. GENERAL CONDITIONS

A. The **Agency**'s issuance of a permit does not release the **permittee** from any liability, penalty, or duty imposed by Minnesota or federal statutes or rules or local ordinances, except the obligation to obtain the permit. (Minn. R. 7001.0150, subp.3, item A)

B. The **Agency**'s issuance of a permit does not prevent the future adoption by the **Agency** of pollution control rules, standards, or orders more stringent than those now in existence and does not prevent the enforcement of these rules, standards, or orders against the **permittee**. (Minn. R. 7001.0150, subp.3, item B)

C. The permit does not convey a property right or an exclusive privilege. (Minn. R. 7001.0150, subp. 3, item C)

D. The **Agency**'s issuance of a permit does not obligate the **Agency** to enforce local laws, rules, or plans beyond that authorized by Minnesota statutes. (Minn. R. 7001.0150, subp.3, item D)

E. The **permittee** shall perform the actions or conduct the activity authorized by the permit in accordance with the plans and specifications approved by the **Agency** and in compliance with the conditions of the permit. (Minn. R. 7001.0150, subp. 3, item E)

F. The **permittee** shall at all times properly operate and maintain the facilities and systems of treatment and control and the appurtenances related to them which are installed or used by the **permittee** to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. The **permittee** shall install and maintain appropriate backup or auxiliary facilities if they are necessary to achieve compliance with the conditions of the permit and, for all permits other than hazardous waste facility permits, if these backup or auxiliary facilities are technically and economically feasible. (Minn. R. 7001.0150. subp. 3, item F.)

G. The **permittee** may not knowingly make a false or misleading statement, representation, or certification in a record, report, plan, or other document required to be submitted to the **Agency** or to the **Commissioner** by the permit. The **permittee** shall immediately upon discovery report to the **Commissioner** an error or omission in these records, reports, plans, or other documents. (Minn. Stat. § 609.671; Minn.R. 7001.0150, subp.3, item G.; and Minn. R. 7001.1090, subp. 1, items G and H)

H. The **permittee** shall, when requested by the **Commissioner**, submit within a reasonable time the information and reports that are relevant to the control of pollution regarding the construction, modification, or operation of the facility covered by the permit or regarding the conduct of the activity covered by the permit. (Minn. R. 7001.0150, subp. 3, item H)

I. When authorized by Minn. Stat. §§ 115.04; 115B.17, subd. 4; and 116.091, and upon presentation of proper credentials, the **Agency**, or an authorized employee or agent of the **Agency**, shall be allowed by the **permittee** to enter at reasonable times upon the property of the **permittee** to examine and copy books, papers, records, or memoranda pertaining to the construction, modification, or operation of the facility covered by the permit or pertaining to the activity covered by the permit; and to conduct surveys and investigations, including sampling or monitoring, pertaining to the construction, modification, or operation of the facility covered by

the permit or pertaining to the activity covered by the permit. (Minn. R. 7001.0150, subp.3, item I)

J. If the **permittee** discovers, through any means, including notification by the **Agency**, that noncompliance with a condition of the permit has occurred, the **permittee** shall take all reasonable steps to minimize the adverse impacts on human health, public drinking water supplies, or the environment resulting from the noncompliance. (Minn. R. 7001.0150, subp.3, item J)

K. If the **permittee** discovers that noncompliance with a condition of the permit has occurred which could endanger human health, public drinking water supplies, or the environment, the **permittee** shall, within 24 hours of the discovery of the noncompliance, orally notify the **Commissioner**. Within five days of the discovery of the noncompliance, the **permittee** shall submit to the **Commissioner** a written description of the noncompliance; the cause of the noncompliance, the exact dates of the period of the noncompliance, if the noncompliance has not been corrected; the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (Minn. R. 7001.0150, subp.3, item K)

L. The **permittee** shall report noncompliance with the permit not reported under item K as a part of the next report, which the **permittee** is required to submit under this permit. If no reports are required within 30 days of the discovery of the noncompliance, the **permittee** shall submit the information listed in item K within 30 days of the discovery of the noncompliance. (Minn. R. 7001.0150, subp.3, item L)

M. The **permittee** shall give advance notice to the **Commissioner** as soon as possible of planned physical alterations or additions to the permitted facility (**MS4**) or activity that may result in noncompliance with a Minnesota or federal pollution control statute or rule or a condition of the permit. (Minn. R. 7001.0150, subp. 3, item M)

N. The permit is not transferable to any **person** without the express written approval of the **Agency** after compliance with the requirements of Minn. R. 7001.0190. A **person** to whom the permit has been transferred shall comply with the conditions of the permit. (Minn. R. 7001.0150, subp.3, item N)

O. The permit authorizes the **permittee** to perform the activities described in the permit under the conditions of the permit. In issuing the permit, the state and **Agency** assume no responsibility for damage to **persons**, property, or the environment caused by the activities of the **permittee** in the conduct of its actions, including those activities authorized, directed, or undertaken under the permit. To the extent the state and **Agency** may be liable for the activities of its employees, that liability is explicitly limited to that provided in the Tort Claims Act, Minn. Stat. § 3.736. (Minn. R. 7001.0150, subp. 3, item O)

P. This permit incorporates by reference the applicable portions of 40 CFR §§ 122.41 and 122.42 parts (c) and (d), and Minn. R. 7001.1090, which are enforceable parts of this permit.

APPENDIX A

SCHEDULES

Table 1
Application Submittal Schedule for **Existing permittees**

Group 1 Within 90 days after permit **effective date**		
Alexandria, City	Glencoe, City	Oak Grove, City
Andover, City	Grand Rapids, City	Orono, City
Anoka Technical College	Greenwood, City	Ramsey, City
Arden Hills, City	Hibbing, City	Sartell, City
Birchwood Village, City	Hilltop, City	South St Paul, City
Cambridge, City	Inver Hills Community College	St Bonifacius, City
Centerville, City	Little Falls, City	St Cloud Technical College
Chaska, City	Long Lake, City	St Louis County
Dakota County Technical College	Maple Plain, City	St Paul Park, City
Detroit Lakes, City	Minnetonka Beach, City	Waite Park, City
Excelsior, City	Monticello, City	Woodland, City
	Northland Comm & Technical College	
Group 2 **Within 120 days after permit effective date**		
Anoka, City	Hutchinson, City	Nowthen, City
Anoka-Ramsey Community College	La Crescent, City	Proctor, City
Baxter, City	Lake Superior College - Duluth	Red Wing, City
Brainerd, City	Landfall, City	Shakopee, City
Buffalo, City	Lauderdale, City	South Washington WD
Champlin, City	Litchfield, City	Spring Park, City
Clay County	Mendota, City	St Joseph, City
Coon Creek WD	Midway Township	St Michael, City
Dayton, City	MN State Comm and Tech College-Moorhead	Stearns County
Dilworth, City	Moorhead, City	Tonka Bay, City
East Grand Forks, City	Mounds View, City	West St Paul, City
Elk River, City	North Oaks, City	Willernie, City
Elko New Market, City		Winona, City
Fridley, City		
Group 3 **Within 150 days after permit effective date**		
Albert Lea, City	Hennepin Technical College Eden Prairie	Owatonna, City
Anoka County	Hermantown, City	Pine Springs, City
Apple Valley, City	Hopkins, City	Plymouth, City
Austin, City	Houston County	Prior Lake, City
Bemidji, City	Hugo, City	Prior Lake-Spring Lake WSD
Benton County	Independence, City	Ramsey County Public Works
Big Lake, City	Inver Grove Heights, City	Ramsey-Washington Metro WD
Big Lake Township	Jackson Township	Redwood Falls, City
Blaine, City	La Crescent Township	Rice Creek WD
Bloomington, City	Laketown Township	Rice Lake Township
Brockway Township	Lakeville, City	Richfield, City

Brooklyn Center, City	Lake Elmo, City	Robbinsdale, City
Brooklyn Park, City	Le Sauk Township	Rochester, City
Burnsville, City	Lexington, City	Rochester Community & Tech College
Capitol Region WD	Lilydale, City	Rochester Township
Carver, City	Lino Lakes, City	Rosemount, City
Carver County	Little Canada, City	Roseville, City
Cascade Township	Loretto, City	Sauk Rapids, City
Century College	Louisville Township	Sauk Rapids Township
Chanhassen, City	Mahtomedi, City	Savage, City
Circle Pines, City	Mankato, City	Osseo, City
Cloquet, City	Maplewood, City	Otsego, City
Columbia Heights, City	Maple Grove, City	Scott County
Coon Rapids, City	Marion Township	Sherburne County
Corcoran, City	Marshall, City	Shoreview, City
Cottage Grove, City	Medicine Lake, City	Shorewood, City
Credit River Township	Medina, City	Spring Lake Park, City
Crystal, City	Mendota Heights, City	Spring Lake, Township
Dakota County	Metropolitan State University	Saint Paul College
Deephaven, City	Minden Township	St Anthony Village, City
Dellwood, City	Minnehaha Creek WD	St Cloud, City
Duluth, City	Minnesota Correctional-Lino Lakes	St Cloud State University
Duluth Township	Minnesota Correctional-St Cloud	St Joseph Township
Eagan, City	Minnetonka, City	St Louis Park, City
East Bethel, City	Minnetrista, City	St Peter, City
Eden Prairie, City	MNDOT Metro District	Stillwater, City
Edina, City	MNDOT Outstate District	Sunfish Lake, City
Empire Township	MN State University-Moorhead	U of M-Duluth
Fairmont, City	Montevideo, City	U of M-Twin Cities Campus
Falcon Heights, City	Mound, City	Vadnais Heights, City
Faribault, City	Mpls Community/Technical College	Valley Branch WD
Farmington, City	New Brighton, City	Victoria, City
Federal Medical Center	New Hope, City	Waconia, City
Fergus Falls, City	New Ulm, City	Waseca, City
Forest Lake, City	Newport City	Washington County
Gem Lake, City	Normandale Community College	Watab Township
Golden Valley, City	North Branch, City	Wayzata, City
Grant, City	North Hennepin Community College	West Lakeland Township
Ham Lake, City	North Mankato, City	White Bear Lake, City
Hastings, City	North St Paul, City	White Bear Township
Haven Township	Northfield, City	Willmar, City
Haverhill Township	Oakdale, City	Woodbury, City
Hennepin County	Olmsted County	Worthington, City
Hennepin Technical College Brooklyn Pk		

Table 2

Existing Permittees – Schedule of Permit Requirements

Permit Requirement	*Schedule*
PART II. APPLICATION REQUIREMENTS • *Submit Part 2 of the permit application with the **SWPPP** document completed in accordance with Part II.D.*	• See Table 1 above.
PART III. **STORMWATER POLLUTION PREVENTION PROGRAM (SWPPP)** • *Complete revisions to incorporate requirements of Part III.A-F into current **SWPPP**.*	• Within 12 months of the date permit coverage is extended, unless other timelines have been specifically established in this permit and identified below.
Part III.C Mapping and Inventory Part III.C.2 Inventory • *Complete and submit inventory in accordance with Part III.C.2.*	• Within 12 months of the date permit coverage is extended.
Part III.D.6 Pollution Prevention/Good Housekeeping For Municipal Operations Part III.D.6.e Inspections • *Conduct inspections.*	• Annually (Part III.D.6.e(1) and (2)), Quarterly (Part III.D.6.e(3)).
Part III.E **Impaired Waters** and **TMDL**s (if applicable) • Submit all information required by Part III.E.	• With each Annual Report required in Part IV.B.
Part III.F. **Alum or Ferric Chloride Phosphorus Treatment Systems** (if applicable) • *Meet requirements for treatment systems under Part III.F.*	• Within 12 months of the date permit coverage is extended.
PART IV. ANNUAL **SWPPP** ASSESSMENT, ANNUAL REPORTING AND RECORD KEEPING Part IV.A Annual **SWPPP** Assessment • *Conduct assessment of the **SWPPP**.*	• Annually and prior to completion of each Annual Report.
Part IV.B Annual Reporting • *Submit an Annual Report*	• By June 30th of each calendar year.

Table 3

New Permittees – Schedule of Permit Requirements

Permit Requirement	*Schedule*
PART II. APPLICATION REQUIREMENTS • *Submit Part 1, and Part 2 of the permit application with the proposed **SWPPP** document as required by Part II.D.*	• Within 18 months of written notification from the **Commissioner** that the **MS4** meets the criteria in Minn. R. 7090.1010, Subpart 1.A. or B. and permit coverage is required.
PART III. **STORMWATER POLLUTION PREVENTION PROGRAM (SWPPP)** • *Complete all requirements of Part III.A-F.*	• Within 36 months of the date permit coverage is extended, unless other timelines have been specifically established in this permit and identified below; or • Within timelines established by the **Commissioner** under Part I.F.2.
Part III.A Regulatory Mechanism(s) **Illicit Discharge** Detection and Elimination (see Part III.D.3)	

• *Develop, implement, and enforce Regulatory Mechanism.*	• Within 12 months of the date permit coverage is extended.
Construction Site **Stormwater** Runoff Control (see Part III.D.4)	
• *Develop, implement, and enforce Regulatory Mechanism.*	• Within six (6) months of the date permit coverage is extended.
Post-Construction **Stormwater** Management (see Part III.D.5)	
• *Develop, implement, and enforce Regulatory Mechanism.*	• Within 24 months of the date permit coverage is extended.
Part III.B Enforcement Response Procedures (ERPs)	
• *Develop and implement written ERPs for the Regulatory Mechanism(s) required under Part III.A.*	• Within 24 months of the date permit coverage is extended.
Part III.C Mapping and Inventory	
Part III.C.1 Mapping	
• *Develop a storm sewer system map.*	• Within 24 months of the date permit coverage is extended.
Part III.C.2 Inventory	
• *Complete and submit inventory in accordance with Part III.C.2.*	• Within 24 months of the date permit coverage is extended.
Part III.D Minimum Control Measures	
Part III.D.4 Construction Site **Stormwater** Runoff Control	
• *Develop, implement, and enforce a Construction Site **Stormwater** Runoff Control program.*	• Within six (6) months of the date permit coverage is extended. See Part III.A Regulatory Mechanism(s).
Part III.D.5 Post-Construction **Stormwater** Management	
• *Develop, implement, and enforce a Post-Construction **Stormwater** Management program.*	• Within 24 months of the date permit coverage is extended. See Part III.A Regulatory Mechanism(s).
Part III.D.6 Pollution Prevention/Good Housekeeping for Municipal Operations	
Part III.D.6.e Inspections	
• *Conduct inspections.*	• Annually (Part III.D.6.e(1) and (2)), Quarterly (Part III.D.6.e(3)).
Part III.E **Impaired Waters** and **TMDLs** (if applicable)	
• *Submit all information required by Part III.E.*	• With each Annual Report required in Part IV.B.
Part III.F. **Alum or Ferric Chloride Phosphorus Treatment Systems** (if applicable)	
• *Meet requirements for treatment systems under Part III.F.*	• Within 12 months of the date permit coverage is extended.
PART IV. ANNUAL **SWPPP** ASSESSMENT, ANNUAL REPORTING AND RECORD KEEPING	
Part IV.A Annual **SWPPP** Assessment	
• *Conduct assessment of the **SWPPP**.*	• Annually and prior to completion of each Annual Report.
Part IV.B Annual Reporting	
• *Submit an Annual Report.*	• By June 30th of each calendar year.

APPENDIX B

DEFINITIONS AND ABBREVIATIONS

The definitions in this Part are for purposes of this permit only.

1. "**Active Karst**" means geographic areas underlain by carbonate bedrock (or other forms of bedrock that can erode or dissolve) with less than 50 feet of sediment cover.

2. **"Agency"** means the Minnesota Pollution Control **Agency** or MPCA. (Minn. Stat. § 116.36, subd. 2.)

3. "**Alum or Ferric Chloride Phosphorus Treatment System**" means the diversion of flowing **stormwater** from a **MS4**, removal of phosphorus through the use a continuous feed of alum or ferric chloride additive, flocculation, and the return of the treated **stormwater** back into a **MS4** or **receiving water**.

4. "**Applicable WLA**" – means a **Waste Load Allocation** assigned to the **permittee** and approved by the USEPA.

5. "**Best Management Practices"** or **"BMPs"** means practices to prevent or **reduce** the pollution of the **waters of the state**, including schedules of activities, prohibitions of practices, and other management practices, and also includes treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge, or waste disposal or drainage from raw material storage. (Minn. R. 7001.1020, subp.5.)

6. **"Commissioner"** means the **Commissioner** of the Minnesota Pollution Control **Agency** or the **Commissioner**'s designee. (Minn. Stat. § 116.36, subd. 3.)

7. "**Common Plan of Development or Sale**" means a contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. One plan is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land-disturbing activities may occur.

8. "**Construction Activity**" includes **construction activity** as defined in 40 CFR § 122.26(b)(14)(x) and **small construction activity** as defined in 40 CFR § 122.26(b)(15). This includes a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated **stormwater** runoff, leading to soil erosion and movement of sediment into **surface waters** or drainage systems. Examples of **construction activity** may include clearing, grading, filling, and excavating. **Construction activity** includes the disturbance of less than one acre of total land area that is a part of a larger **common plan of development or sale** if the larger common plan will ultimately disturb one (1) acre or more.

9. **"DNR Catchment Area"** means the Hydrologic Unit 08 areas delineated and digitized by the Minnesota DNR. The catchment areas are available for download at the Minnesota DNR Data Deli website. **DNR catchment area**s may be locally corrected, in which case the local corrections may be used.

10. **"Effective Date"** means the date, located on the front cover of this permit, on which this permit shall become effective.

11. **"Existing Permittee"** means an **Owner/Operator** of a **small MS4** that has been authorized to discharge **stormwater** under a previously issued **general permit** for **small MS4**s in the state of Minnesota.

12. **"General permit"** means a permit issued under Minn. R. 7001.0210 to a category of **permittee**s whose operations, emissions, activities, discharges, or facilities are the same or substantially similar. (Minn. R. 7001.0010, subp.4.)

13. **"Geographic Coordinate"** means the point location of a **stormwater** feature expressed by X, Y coordinates of a standard Cartesian coordinate system (i.e. latitude/longitude) that can be readily converted to Universal Transverse Mercator (UTM), Zone 15N in the NAD83 datum. For polygon features, the **geographic coordinate** will typically define the approximate center of a **stormwater** feature.

14. **"Green Infrastructure"** means a wide array of practices at multiple scales that manage wet weather and that maintains or restores natural hydrology by infiltrating, evapotranspiring, or harvesting and using stormwater. On a regional scale, green infrastructure is the preservation or restoration of natural landscape features, such as forests, floodplains and wetlands, coupled with policies such as infill and redevelopment that reduce overall imperviousness in a watershed. On the local scale, green infrastructure consists of site and neighborhood-specific practices, such as bioretention, trees, green roofs, permeable pavements and cisterns.

15. **"High Flow Bypass"** means a function of an inlet device that allows a certain flow of water through, but diverts any higher flows away. **High flow bypass**es are generally used for **BMPs** that can only treat a designed amount of flow and that would be negatively affected by higher flows.

16. **"Illicit Discharge"** means any discharge to a **municipal separate storm sewer** that is not composed entirely of stormwater except discharges pursuant to a NPDES permit (other than the **NPDES** permit for discharges from the **municipal separate storm sewer**) and discharges resulting from firefighting activities. (40 CFR § 122.26(b)(2))

17. **"Impaired Water"** means waters identified as impaired by the **Agency**, and approved by the USEPA, pursuant to section 303(d) of the Clean Water Act (33 U.S.C. § 303(d)).

18. **"Maximum Extent Practicable"** or **"MEP"** means the statutory standard (33 U.S.C. § 1342(p)(3)(B)(iii)) that establishes the level of pollutant reductions that an **Owner** or **Operator** of **Regulated MS4s** must achieve. The USEPA has intentionally not provided a precise definition of **MEP** to allow maximum flexibility in **MS4** permitting. The pollutant reductions that represent **MEP** may be different for each **small MS4**, given the unique local hydrologic and geologic concerns that may exist and the differing possible pollutant control strategies. Therefore, each **permittee** will determine appropriate **BMPs** to satisfy each of the six Minimum Control Measures (MCMs) through an evaluative process. The USEPA envisions application of the **MEP** standard as an iterative process.

19. **"Municipal separate storm sewer system"** or **"MS4"** means a conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains:

    a. owned or operated by a state, city, town, county, district, association, or other public body, created by or pursuant to state law, having jurisdiction over disposal of sewage, industrial

wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district, or drainage district or similar entity, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management **Agency** under section 208 of the federal Clean Water Act, United States Code, title 33, section 1288, that discharges into **waters of the state**

b. designed or used for collecting or conveying stormwater

c. that is not a combined sewer; and

d. that is not part of a publicly owned treatment works as defined in 40 CFR § 122.2

Municipal separate storm sewer systems do not include separate storm sewers in very discrete areas, such as individual buildings. (Minn. R. 7090.0080, subp. 8).

20. **"New development"** means all **construction activity** that is not defined as **redevelopment.**

21. **"New Permittee"** means an **Owner/Operator** of a **small MS4** that has not been authorized to discharge **stormwater** under a previously issued General **Stormwater** Permit for **small MS4**s in the state of Minnesota and that applies for, and obtains coverage under this permit.

22. **"Non-Stormwater Discharge"** means any discharge not composed entirely of **stormwater**.

23. **"Operator"** means the **person** with primary operational control and legal responsibility for the **municipal separate storm sewer system**. (Minn. R. 7090.0080, subp.10.)

24. **"Outfall"** means the point source where a **municipal separate storm sewer system** discharges to a **receiving water**, or the **stormwater** discharge permanently leaves the **permittee**'s **MS4**. It does not include diffuse runoff or conveyances that connect segments of the same stream or water systems (e.g., when a conveyance temporarily leaves an **MS4** at a road crossing).

25. **"Owner"** means the **person** that owns the **municipal separate storm sewer system**. (Minn. R. 7090.0080, subp.11.)

26. **"Permittee"** means a **person** or **person**s, that signs the permit application submitted to the **Agency** and is responsible for compliance with the terms and conditions of this permit.

27. **"Person"** means the state or any Agency or institution thereof, any municipality, governmental subdivision, public or private corporation, individual, partnership, or other entity, including, but not limited to, association, commission or any interstate body, and includes any officer or governing or managing body of any municipality, governmental subdivision, or public or private corporation, or other entity.(Minn. Stat. § 115.01, subd. 10.)

28. **"Pipe"** means a closed manmade conveyance device used to transport **stormwater** from location to location. The definition of **pipe** does not include foundation drain **pipe**s, irrigation **pipe**s, land drain tile **pipe**s, culverts, and road sub-grade drain **pipe**s.

29. **"Pollutant of Concern"** means a pollutant specifically identified in a USEPA-approved **TMDL** report as causing a water quality impairment.

30. **"Receiving Water"** means any lake, river, stream or **wetland** that receives **stormwater** discharges from an **MS4.**

31. **"Redevelopment"** means any **construction activity** where, prior to the start of construction, the areas to be disturbed have 15 percent or more of impervious surface(s).

32. **"Reduce"** means **reduce** to the **Maximum Extent Practicable (MEP)** unless otherwise defined in the context in which it is used.

33. **"Saturated Soil"** means the highest seasonal elevation in the soil that is in a reduced chemical state because of soil voids being filled with water. **Saturated soil** is evidenced by the presence of redoximorphic features or other information.

34. **"Significant Materials"** includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any chemical the facility is required to report pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA); fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with **stormwater** discharges. When determining whether a material is significant, the physical and chemical characteristics of the material should be considered (e.g. the material's solubility, transportability, and toxicity characteristics) to determine the material's pollution potential. (40 CFR § 122.26(b)(12).

35. **"Small Municipal Separate Storm Sewer System"** or **"small MS4",** means all separate storm sewers that are:

    1. Owned or operated by the United States, a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, **stormwater**, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management Agency under section 208 of the CWA that discharges to waters of the United States.

    2. Not defined as "large" or "medium" **Municipal Separate Storm Sewer Systems** pursuant to 40 CFR § 122.26 paragraphs (b)(4) and (b)(7) or designated under paragraph (a)(1)(v).

    3. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

36. **"Stormwater"** means **stormwater** runoff, snow melt runoff, and surface runoff and drainage. (Minn. R. 7090.0080, subp.12.)

37. **"Stormwater flow direction"** means the direction of predominant flow within a **pipe**. Flow direction can be discerned if **pipe** elevations can be displayed on the storm sewer system map.

38. **"Stormwater Pollution Prevention Program"** or **"SWPPP"** means a comprehensive program developed by the **permittee** to manage and **reduce** the discharge of pollutants in **stormwater** to and from the **small MS4**.

39. **"Structural Stormwater BMP"** means a stationary and permanent **BMP** that is designed, constructed and operated to prevent or **reduce** the discharge of pollutants in **stormwater.**

40. **"Total Maximum Daily Load"** or **"TMDL"** means the sum of the individual **Waste Load Allocations** for point sources and load allocations for nonpoint sources and natural background, as more fully defined in 40 CFR § 130.2, paragraph (i). A **TMDL** sets and allocates the maximum amount of a pollutant that may be introduced into a **water of the state** and still assure attainment and maintenance of **water quality standards**. (Minn. R. 7052.0010 subp. 42)

41. **"Waste Load Allocation"** or **"WLA"** means the portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution, as more fully defined in Code of Federal Regulations, title 40, section 130.2, paragraph (h). In the absence of a **TMDL** approved by USEPA under 40 CFR § 130.7, or an assessment and remediation plan developed and approved according to Minn. R. 7052.0200, subp. 1.C, a **WLA** is the allocation for an individual point source that ensures that the level of water quality to be achieved by the point source is derived from and complies with all applicable **water quality standards** and criteria. (Minn. R. 7052.0010 subp. 45)

42. **"Water pollution"** means (a) the discharge of any pollutant into any waters of the state or the contamination of any waters of the state so as to create a nuisance or render such waters unclean, or noxious, or impure so as to be actually or potentially harmful or detrimental or injurious to public health, safety or welfare, to domestic, agricultural, commercial, industrial, recreational or other legitimate uses, or to livestock, animals, birds, fish or other aquatic life; or (b) the alteration made or induced by human activity of the chemical, physical, biological, or radiological integrity of waters of the state. (Minn. Stat. § 115.01, subd. 13)

43. **"Water Quality Standards"** means those provisions contained in Minn. R. 7050 and 7052.

44. **"Waters of the State"** means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof. (Minn. Stat. § 115.01, subd. 22.)

45. **"Wetlands"** are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. **Wetlands** generally include swamps, marshes, bogs, and similar areas. Constructed **wetlands** designed for wastewater treatment are not **waters of the state**. **Wetlands** must have the following attributes:

    1. A predominance of hydric soils

    2. Inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in a saturated soil condition and

3. Under normal circumstances support a prevalence of such vegetation. (Minn. R. 7050.0186, subp. 1a.B.)

ABBREVIATIONS AND ACRONYMS

- BMP - Best Management Practice
- CFR – Code of Federal Regulations
- CWA – Clean Water Act or the Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq)*
- DNR – Department of Natural Resources
- DWSMA – Drinking Water Supply Management Area
- ERPs– Enforcement Response Procedures
- IDDE - Illicit Discharge Detection and Elimination
- MCM – Minimum Control Measure
- MDH – Minnesota Department of Health
- MEP – Maximum Extent Practicable
- MS4 - Municipal Separate Storm Sewer System
- NPDES - National Pollutant Discharge Elimination System
- ORVW - Outstanding Resource Value Water
- SDS – State Disposal System
- TMDL - Total Maximum Daily Load
- TP – Total Phosphorus
- TSS - Total Suspended Solids
- USEPA - United States Environmental Protection Agency
- WLA – Waste Load Allocation