

CITY OF DEEPHAVEN MS4 PROGRAM



STORMWATER POLLUTION PREVENTION PLAN



MS4 To-Do-List City of Deephaven

- **Quarterly**
 - Inspect stockpiles and storage and material handling areas, as identified in facility inventory, to determine any maintenance needs and proper function of BMPs.
 - Circulate stormwater education articles in the City newsletter.
- **Annually**
 - Inspect structural stormwater BMPs to determine structural integrity, proper function, and maintenance needs. Maintain structural stormwater BMPs per inspection findings to ensure maximum treatment effectiveness.
 - Conduct public meeting, prior to June 30th, to receive public opinion on adequacy and effectiveness of City's SWPPP. Meeting can be held concurrently with regular City Council meeting. Appropriate public notice requirements must be provided.
 - Conduct presentation to City Council regarding previous year's progress towards implantation of SWPPP provisions.
 - Provide training for employees commensurate with their job duties.
 - Conduct assessment of SWPPP to determine program compliance, suitability of Best Management Practices (BMPs), and progress towards achieving measurable goals identified for the current permit.
 - Submit Annual Report to MPCA by June 30th.
- **On-Going**
 - Maintain City's Stormwater Management webpage.
 - Accept correspondence from residents regarding illicit discharges, comments on SWPPP, or construction site erosion control violations. Route comments to responsible City staff.
- **Once During Permit**
 - Inspect all ponds and outfalls in order to determine structural integrity, proper function, and maintenance needs.

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CITY OF DEEPHAVEN

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1. MS4 SWPPP Application for Reauthorization



**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 Deephaven *County: Hennepin
(city, county, municipality, government agency or other entity)

*Mailing address: 20225 Cottagewood Road

*City: Deephaven *State: MN *Zip code: 55331

*Phone (including area code): (952) 474-4755 *E-mail: danayoung@mchsi.com

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

*Last name: Karpas *First name: Gus
(department head, MS4 coordinator, consultant, etc.)

*Title: Planning and Zoning Coordinator

*Mailing address: 20225 Cottagewood Road

*City: Deephaven *State: MN *Zip code: 55331

*Phone (including area code): (952) 474-4755 *E-mail: guskarpas@mchsi.com

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

Last name: Bean First name: Robert
(department head, MS4 coordinator, consultant, etc.)

Title: Water Resources Engineer

Mailing address: 2638 Shadow Lane, Suite 200

City: Chaska State: MN Zip code: 55318

Phone (including area code): (612) 756-3184 E-mail: bobbe@bolton-menk.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: Gus Karpas
(This document has been electronically signed)

Title: Planning and Zoning Coordinator Date (mm/dd/yyyy): 12/20/2013

Mailing address: 20225 Cottagewood Road

City: Deephaven State: MN Zip code: 55331

Phone (including area code): (952) 474-4755 E-mail: guskarpas@mchsi.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
Minnehaha Creek Watershed District Provides review, regulation, and inspection for Construction Site Stormwater Runoff Control and Post-construction Stormwater Management. Partner to provide educational materials and engage public with various programs. Partner to inspect for illicit discharges.	MCM 1-5

- 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:

The City will update its ordinances to meet permit requirements regarding Illicit Discharge Detection and Elimination within 12 months of permit coverage being extended. Also, MCWD recently adopted a final version of their IDDE rule. The City will partner with MCWD to inspect for illicit discharges.

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: Minnehaha Creek Watershed District - Erosion Control Rule

- 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: Chapter 13 Zoning and Land Use>>Section 1370. Construction Site Runoff Control

MCWD: Erosion Control Rule

Direct link:

City: <http://www.cityofdeephaven.org/Ordinances/2012%20B/12-17-12%20%20Chapter%2013.pdf>

MCWD:

<http://www.minnehahacreek.org/sites/minnehahacreek.org/files/pdfs/regulatory/Erosion%20Control%20Rule.pdf>

- ☐ 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:

Within 12 months from the date permit coverage is extended, the City will revise its ordinances to state that applicants for building permits, subdivisions, land disturbing activities greater than or equal to one acre, or areas where City determines activity poses risk to water resources will need to obtain MCWD approval for their Erosion Control Rule and copies of any required permits must be submitted prior to City approval. MCWD's rule does not currently meet permit requirements. MCWD will update their rule within 12 months of their permit coverage being extended, and Deephaven will coordinate with MCWD to make sure the City is aware of all rule updates.

- 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:

Within 12 months from the date permit coverage is extended, the City will revise its ordinances to state that applicants for building permits, subdivisions, land disturbing activities greater than or equal to one acre, or areas where City determines activity poses risk to water resources will need to obtain MCWD approval for their Erosion Control Rule and copies of any required permits must be submitted prior to City approval. MCWD's rule does not currently meet permit requirements. MCWD will update their rule within 12 months of their permit coverage being extended, and Deephaven will coordinate with MCWD to make sure the City is aware of all rule updates.

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: Minnehaha Creek Watershed District - Stormwater Management Rule

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:

MCWD: Stormwater Management Rule

Direct link:

<http://www.minnehahacreek.org/sites/minnehahacreek.org/files/pdfs/regulatory/Stormwater%20Management%20Rule.pdf>

☐ 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 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. ☐ Yes ☒ No
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 ☒ Yes ☐ No

implemented to ensure the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) continue to be met.

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:

Within 12 months from the date permit coverage is extended, the City will revise its ordinances to state that applicants for building permits, subdivisions, land disturbing activities greater than or equal to one acre, or areas where City determines activity poses risk to water resources will need to obtain MCWD approval for their Stormwater Management Rule and copies of any required permits must be submitted prior to City approval. MCWD's rule does not currently meet permit requirements. MCWD will update their rule within 12 months of their permit coverage being extended, and Deephaven will coordinate with MCWD to make sure the City is aware of all rule updates.

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:

Within 12 months from the date permit coverage is extended, Deephaven will develop written procedures that will satisfy these requirements.

B. Describe your ERPs:

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

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

The storm sewer map was initially completed in 2008 and is updated annually as development occurs. The map was updated with the pond inventory, including structural BMPs, ponds, and outfalls, in 2011, and the Pond Inventory Form was submitted to the MPCA on December 27, 2011.

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:

- E. Answer **yes** or **no** to indicate if you are attaching your pond, wetland and lake inventory to the MPCA ☐ Yes ☒ No 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*.

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

- 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**:

Deephaven is primarily residential, and therefore, the focus for education is mostly on residential issues. However, no specific high-priority topics have been identified. Stormwater articles are included in the City newsletter, which is distributed quarterly. A presentation is given to the City Council annually explaining the specific components of the SWPPP. The City also relies on the Minnehaha Creek Watershed District (MCWD) for education, including the posting of stormwater management and pollution prevention information on their website and the sponsoring of water resources related events.

- 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
Distribute Educational Materials	Circulate a newsletter that includes stormwater articles to approximately 1,500 households and businesses. Display various stormwater brochures at City Hall for public use. – newsletter quarterly
Community Events	Sponsor community events to help manage and increase awareness of stormwater runoff and associated pollutants. Spring Cleanup Day is held the first Saturday in May for items not usually taken by normal garbage hauler. – annually
Presentation to City Council	Present to City Council on components of SWPPP to increase Council awareness of stormwater runoff issues. – annually
Partner with MCWD for Public Education and Outreach	Provide assistance with water resources related events. – as requested by MCWD
Training	Train all City staff on erosion and sediment control, illicit discharge detection, and stormwater runoff management. – annually
Stormwater Education on City Website	Provide links on City's website to MCWD and the Lake Minnetonka Conservation District (LMCD) for water resources related information. Maintain the City's Stormwater Management page with information regarding grant opportunities and pollution prevention. - continuously
BMP categories to be implemented	Measurable goals and timeframes
Partner with MCWD for Public Education and Outreach	Post links to events and activities sponsored by MCWD on the

	City's website. – within 12 months of permit coverage being extended
Social Media	Post messages or provide links regarding stormwater management and pollution prevention on Facebook and Twitter. – within 12 months of permit coverage being extended
Stormwater Education on City Website	Update the Stormwater Management page with information regarding stormwater management, pollution prevention, and additional resources. Provide links to current SWPPP, MS4 permit, and application for public viewing. – within 12 months of permit coverage being extended
Program Evaluation	Review Education Program for effectiveness and future needs. - annually

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

Gus Karpas - Planning and Zoning Coordinator

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:

Every year, the City presents and hears comments on the SWPPP at a regular City Council meeting. This is typically done at a meeting in the Spring, and a notice is provided to the public on the City's website and at City Hall.

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
Appropriate Public Notice	Provide a notice of 30 days for the annual public meeting to present accomplishments and discuss the SWPPP. The meeting will run concurrently with a City Council meeting. Notice will be posted in local newspapers, the City website, and at City Hall. - annually
Solicit Public Input	Accept correspondence to report illicit discharges, provide comments regarding the SWPPP, and report construction site runoff violations. All comments received are documented and then routed to appropriate staff. – continuously
Annual Meeting	Host annual meeting to run concurrently with City Council meeting to present accomplishments and discuss the SWPPP. - annually

BMP categories to be implemented	Measurable goals and timeframes
Online Availability of SWPPP Document	Provide a PDF of the current SWPPP on the City's Stormwater Management page. - update annually.

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:

Gus Karpas - Planning and Zoning Coordinator

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 will update its ordinances to meet permit requirements regarding Illicit Discharge Detection and Elimination within 12 months of permit coverage being extended. Also, MCWD recently adopted a final version of their IDDE rule. The City will partner with MCWD to inspect for illicit discharges. A Storm Sewer Map has been created that shows the locations of all storm catchbasins, manholes, pipes over 12", and outfalls within the City.

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 will update its ordinances to meet permit requirements regarding Illicit Discharge Detection and Elimination within 12 months of permit coverage being extended. Also, MCWD recently adopted a final version of their IDDE rule. The City will partner with MCWD to inspect for illicit discharges. The training program for all City staff will be updated, if necessary, regarding IDDE, and staff is currently directed to inspect for illicit discharges during all normal work activities. High potential areas for IDDE will be identified and added to the City's Storm Sewer Map. Procedures for response, investigating, locating, and eliminating illicit discharges will be developed. All required tasks will be completed within 12 months of permit coverage being extended.

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
Storm System Map	Maintain map and update with changes to City's storm sewer, structural BMPs, ponds, and outfalls. – annually

Inspection	City staff is directed to inspect for illicit discharges during all normal work activities. Site specific inspections are also performed when reports are received from the general public. – continuously
Training	Provide training for City staff. – annually
Public and Employee IDDE Information Program	Provide education to City staff, businesses, and the public regarding IDDE through stormwater articles in the newsletter, the MCWD website, and a presentation to City Council.
BMP categories to be implemented	Measurable goals and timeframes
Regulatory Control Program	Update ordinances to meet permit requirements for IDDE. – within 12 months of permit coverage being extended
Training	Update training program for all City staff regarding IDDE, if necessary, due to new permit requirements and MCWD rules. – within 12 months of permit coverage being extended
Storm System Map	Add high-priority outfalls and high potential land uses for illicit discharge inspection to the City's storm system map. – within 12 months of permit coverage being extended
Inspection	Designated City staff will perform inspections of high-priority outfalls, and around high potential land uses (fast food restaurants, dumpsters, car washes, mechanics, and oil changers). Information from previous inspections will be used to determine further high potential outfalls. Inspections will be performed in dry-weather as much as possible. – monthly

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:

Procedures for record-keeping of the Illicit Discharge, Detection and Elimination Program will be developed in accordance with the permit requirements and the new MCWD rule within 12 months of permit coverage being extended.

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

Gus Karpas - Planning and Zoning Coordinator

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's ordinances requires any application for a building permit, subdivision, land disturbing activity greater than or equal to one acre, or area where City determines activity poses risk to water resources to include a stormwater pollution prevention plan for review. Review of construction site stormwater pollution prevention plans are performed prior to any land disturbance and appropriate selection and use of BMPs are coordinated with Owners and Contractors. The City also relies on the Minnehaha Creek Watershed District (MCWD) for review and directs all applicants to work with MCWD for district approvals. A copy of MCWD approval for any required permitting must be submitted to the City prior to any land disturbance. In addition to review, the City relies on MCWD for inspections of construction sites and enforcement of erosion and sediment control violations.

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

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
Ordinance and other Regulatory Program	Rely on City code and MCWD regulatory requirements for plan review and approvals. Rely on MCWD for inspection of construction sites and enforcement of erosion and sediment control violations. – continuously
BMP categories to be implemented	Measurable goals and timeframes

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

Gus Karpas - Planning and Zoning Coordinator

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:

Deephaven relies on Minnehaha Creek Watershed District (MCWD) for regulatory requirements regarding post-construction stormwater management. Applicants to the City for building, subdivision, and/or land disturbance permits are directed to work with MCWD for district approvals. A copy of MCWD approvals and maintenance agreements for any required stormwater management facilities must be submitted to the City prior to any land disturbance. The City also reviews stormwater management plans to ensure any structural facilities fit City needs and vision.

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

construction activity?

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
Regulatory Program	Rely on MCWD to review and approve post-construction stormwater management plans for required projects. Review stormwater management plans regarding City needs and vision. – continuously
Long Term Operation and Maintenance	Operate and maintain publicly owned stormwater management facilities in accordance with permit requirements. Rely on MCWD for Maintenance Agreements requiring property owners/Homeowners Associations to maintain structural facilities. Inspect all facilities in the next five years. – continuously

BMP categories to be implemented	Measurable goals and timeframes

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

Gus Karpas - Planning and Zoning Coordinator

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:

Deeplaven inspects its structural pollution control devices on an annual basis and inspects all ponds and outfalls at least once every five years. City staff inspects publically owned areas for potential discharges. City streets are swept annually

in the spring to remove leaf litter and residuals from salting streets during winter.

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:

A Facility Inventory will be developed in accordance with permit requirements within 12 months of permit coverage being extended.

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
Training	Provide training for City staff. – annually
Street Sweeping	Sweep streets to remove sediment and debris from paved surfaces and minimize amount of material received by storm drainage system. – annually
Inspection	Inspect all stormwater pollution control devices annually. Inspect all outfalls and ponds once every five years. Inspect all exposed stockpiles, storage, and material handling areas after all rain events of 1" or greater.
BMP categories to be implemented	Measurable goals and timeframes
Facility Inventory	Develop a Facility inventory of City-owned properties and buildings. – complete within 12 months of permit coverage extension and update annually
Pond Assessment Procedures	Develop procedures for determining TSS and TP treatment effectiveness of City ponds used for stormwater treatment. – complete procedure development within 12 months of permit coverage extension and implement assessment of all ponds within the next five years.
Inspection	Increase inspection frequency of public facilities to once a week and after any rain event. Increase inspection frequency of stockpiles and storage and material handling areas as described in the Facility Inventory to once a quarter. Utilize a checklist that documents findings and allows staff to compare to previous inspections. – continuously
SWPPP Update	Update SWPPP to include Enforcement Response Procedures (ERPs), IDDE High Potential Map, Facility Inventory, BMP Effectiveness Assessment Procedures, and any other revisions necessary to meet requirements of new permit. – complete within 12 months of permit coverage extension

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:

Within 12 months of permit coverage being extended, Deephaven will develop procedures for determining TSS and TP removal effectiveness of stormwater treatment ponds and a schedule for implementation.

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

Gus Karpas - Planning and Zoning Coordinator

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

2. MCM 1 / MCM 2 – Public Education & Public Participation Program

CITY OF DEEPHAVEN

Education Work Plan



2015

**EDUCATION WORK PLAN
CITY OF DEEPHAVEN**

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EDUCATION WORK PLAN

CITY OF DEEPHAVEN

Introduction

Minimum Control Measure (MCM) 1 of the City's Stormwater Pollution Prevention Plan (SWPPP) addresses public education and outreach. The Education Work Plan outlines the focus of education and implementation tools for the City to use in increasing public knowledge on protection, preservation and management of the City's water resources.

Section 1: Target Audience

Educational needs are dependent on the target audience. Each target audience plays a different role in the protection, preservation and management of water resources. Thus, programs and tools are tailored to different target audiences. This plan lays out the priority area education programs and tools according to the target audiences listed below.

- Local Officials & Decision makers: appointed/elected officials such as city councils and planning commissions.
- Staff: planners, engineers and public works staff.
- Homeowners/Landowners: citizens.

Section 2: Topic Areas/Issues of Concern

- Increase public knowledge on protecting and improving the water quality of City lakes, streams, and wetlands.
- Increase City staff and local officials' knowledge on illicit discharges, illicit discharge detection, and municipal operations best management practices (BMPs).

Section 3: Responding to Public Comments

- Appropriate City staff shall provide a response to any comments received regarding the SWPPP within three business days.
- The public comment and City response shall be documented per MS4 requirements and maintained by the City for at least three years beyond the term of the current permit.

Section 4: Timeline, Methods, and Responsibilities

- Quarterly
The City of Deephaven will develop, or solicit from outside entities, stormwater articles for the City newsletter to inform residents and businesses about stormwater issues. The newsletter shall be published quarterly. The City shall attempt to publish an article in each of the newsletters that discusses Stormwater Pollution Prevention and generally cover such issues as yard waste disposal, soil erosion control and impaired water bodies; however, other topics will be covered as necessary.
- Annually
City staff shall prepare a presentation to the City Council on an annual basis to explain the past year's progress towards implementing SWPPP provisions and what is planned for the upcoming year. This presentation shall be used as an opportunity to increase Council awareness of storm water runoff issues and the importance of implementing

EDUCATION WORK PLAN

CITY OF DEEPHAVEN

SWPPP provisions. Staff shall cover issues relating to each of the six minimum control measures in the presentation.

- Annually
The City shall conduct an annual public meeting to receive public opinion on the adequacy and effectiveness of the SWPPP program, and serve as an opportunity to provide public awareness of stormwater runoff issues.
- Annually
The City shall conduct annual employee training for all staff commensurate with their job duties. At a minimum, all staff shall be trained in illicit discharge detection. Public works staff shall also be trained on inspections, maintenance activities, illicit discharge elimination, and municipal operations. Refer to the City's Employee Training Program for specific education topics defined for staff.
- Ongoing
City Website – Stormwater Management page: The City shall maintain the Stormwater Management web page, which provides the audience with general information regarding the effects of polluted stormwater, prevention techniques, and resources for additional information. As a goal, the City shall provide information on the website to address each of the six minimum control measures. Also, the City shall post the approved SWPPP on the website for public viewing.
- Ongoing
The City shall accept any correspondence regarding illicit discharges, construction site sedimentation and erosion violations, or the general adequacy and effectiveness of the SWPPP. All comments received will be routed to appropriate staff, and responses shall be documented in the Annual Report and Documentation section of the SWPPP.

3. MCM 3 – Illicit Discharge Detection and Elimination (IDDE)

CITY OF DEEPHAVEN

Illicit Discharge Detection and Elimination Program



2015

**ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
CITY OF DEEPHAVEN**

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ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

CITY OF DEEPHAVEN

Introduction

The purpose of the Illicit Discharge Detection and Elimination (IDDE) Program is to detect and eliminate sources of pollution to the municipal separate storm sewer system (MS4) as required by the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit program, permit number: MNR040000.

The primary goal of the IDDE program is to identify and then eliminate illicit discharges. Examples of illicit discharges include:

- Direct or indirect sanitary wastewater discharges that connect to the storm drainage system, such as a shop floor drain connected to a storm drain, a cross-connection between the municipal sewer and storm sewer systems, a damaged sanitary sewer line that is leaking sewage into a cracked storm sewer line, or a failing septic system that is leaking into a water course.
- Materials (e.g., used motor oil) that have been dumped illegally into a storm drain catch basin or other stormwater facility.
- Improper home or business owner activities such as washing paint brushes into a catch basin, washing new textured concrete driveways into a storm drain, draining swimming pools to the storm system (swimming pools have high pH and chlorine), excess use of fertilizers, or washing cars with chemicals that enter the storm drainage system.
- Sediment and sediment-laden runoff from construction sites entering the storm drainage system.

Additional goals of the IDDE program include:

- Improve water-quality in local water bodies by reducing incidences of pollution.
- Increase awareness among municipal employees, businesses, and the general public of the direct connection between the storm drainage system and local water bodies.
- Educate municipal employees, businesses, and the general public of the hazards associated with illicit discharges and best management practices (BMPs) available.
- Facilitate consistency in response to incidences of illicit discharges to the storm drainage system through a coordinated system of procedures and education.

The NPDES Permit sets forth the minimum elements of the plan which are listed below. These minimum elements are described throughout the remainder of this document.

Section 1: Municipal Storm System Mapping (Part III.D.3.a)

Section 2: Regulatory Mechanism (Part III. D.3.b)

Section 3: Incorporating Illicit Discharge Detection into Maintenance and Inspection Activities (Part III.D.3.c)

Section 4: Visual Inspection Procedures to Detect and Track Illicit Discharges (Part III.D.3d)

Section 5: Illicit Discharge Recognition Training for Field Staff (Part III.D.3e)

Section 6: Identification of Priority Areas (Part III.D.3.f)

Section 7: Response Procedures (Part III.D.3.g)

Section 8: Documentation (Part III.D.3.h).

Section 1: Municipal Storm System Mapping

The NPDES Phase II Permit outlines minimum information that shall be included in the City's Municipal Storm System map:

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM CITY OF DEEPHAVEN

- Location of all known municipal storm sewer conveyances 12" or greater in diameter, including the stormwater flow direction in the pipes,
- Outfalls, including a unique identification (ID) number assigned by the City, and associated geographic coordinate,
- Structural stormwater BMPs that are part of the City's small MS4,
- All receiving waters.

The City has completed GIS mapping of the city's stormwater system, including all basins, pipes, ditches and stormwater facilities, and all outfalls, structural BMPs, ponds, and wetlands have been assigned unique ID numbers. The City shall update the Storm System Map annually, and the map shall be used to schedule and track maintenance activities, as well as plan for capital improvement projects.

Section 2: Regulatory Mechanism

Section 1025 of the City's current municipal code prohibits illicit discharges. Connections to the storm drainage system must contain only stormwater and groundwater; otherwise they are to be eliminated. The IDDE ordinance is included in the appendix for reference.

Section 3: Incorporating Illicit Discharge Detection into Maintenance and Inspection Activities

All Public Works staff shall be trained in detection of illicit discharges and shall conduct inspections for illicit discharges while performing regular job duties, including maintenance and inspection activities. When a discharge is discovered by staff, response procedures shall be initiated according to **Section 7** of this program. When feasible, illicit discharge inspections shall be conducted during dry weather conditions (72 hours or more of no precipitation).

Section 4: Visual Inspection Procedures to Detect and Track Illicit Discharges

4.1. Tracking the Source

Source tracking begins when an illicit discharge is identified through outfall inspections, field assessment/testing, or a report from City staff or residents. When an illegal dumping or the source of an illicit discharge is directly observed by City staff, no investigation is necessary and corrective actions outlined in **Section 7** shall be implemented. When the source of the non-stormwater discharge is unknown, one of two primary visual inspection methods shall be used to locate the source of the illicit discharge:

- Method A – Storm Drain Network Investigations
- Method B – Drainage Area Investigations

The method used depends on the type of information collected or reported, level of understanding of the drainage network, and existing knowledge of operations and activities on the surrounding properties. All source tracking investigations shall be documented and recorded.

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

CITY OF DEEPHAVEN

4.1.1. Method A – Storm Drain Network Investigation

This method involves progressive investigation at manholes in the storm drain network to narrow down the location where the illicit discharge is entering the drainage system. This method is best used to identify constant or frequent discharge sources, such as failing septic systems or restaurant sink drain connections to the storm system. Infrequent discharges, such as a surface spills or intentional dumping, shall be investigated using Method B described later in this section.

Investigations using this method shall include the following steps:

- 4.1.1.1. Consult Outfall Inspection records and previous IDDE Reports for any background information that may be relevant to the current investigation.
- 4.1.1.2. Consult the Storm System Map and identify manholes at downstream end of major branches upstream of illicit discharge.
- 4.1.1.3. Investigate manholes identified from Storm System Map for evidence of illicit discharge and determine branch containing source. For larger networks, the first two steps shall be repeated as necessary to narrow search and limit number of manholes potentially investigated.
- 4.1.1.4. Once branch of network is identified, progressively investigate upstream manholes until evidence of discharge is no longer present.
- 4.1.1.5. Once manhole is found with no discharge present, investigate potential sources between last manhole with discharge and clean manhole for evidence of illicit discharge.
- 4.1.1.6. If source cannot be determined by surface investigation, additional field tests shall be performed as necessary. The type of field test used shall be at the discretion of field staff and shall best suit the conditions of the investigation. Additional field test types shall include Dye Testing, Smoke Testing, and Televising. The Center for Watershed Protection's Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments (Pitt *et al.*, 2004) provides instructions for employing these testing techniques. The relevant pages from that manual are included in **Appendix C**.
- 4.1.1.7. If the potential source appears to be located on private property, field staff shall coordinate with the City Administrator to initiate proper site entry procedures in order to identify exact source.
- 4.1.1.8. Once source of illicit discharge is identified, field staff shall provide inspection report and investigation notes to the City Administrator to coordinate response procedures outlined in **Section 7** of this program. All investigation procedures and findings shall be documented using the IDDE Report and Response Form located in **Appendix A**. Additional documentation may be provided with form as necessary.

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4.1.2. Method B – Drainage Area Investigation

The Drainage Area Investigation method shall be used if the illicit discharge is infrequent or when the discharge has a distinct or unique characteristic that allows for quick determination of source.

Investigations using this method shall include the following steps:

- 4.1.2.1. Consult Outfall Inspection records and previous IDDE Reports for any background information that may be relevant to the current investigation.
- 4.1.2.2. Discuss potential source with field staff, consultant Inspectors, consultant Engineers, and other knowledgeable City staff to identify the most likely source. **Table 4.1** lists common activities or land uses most likely associated with specific illicit discharges.
- 4.1.2.3. Consult City Land Use and Storm System Map to identify probable locations of the potential source discussed in Step 1.
- 4.1.2.4. Conduct a visual inspection of the probable locations to determine the source of the illicit discharge.
- 4.1.2.5. If the potential source appears to be located on private property, field staff shall coordinate with the City Administrator to initiate proper site entry procedures in order to identify exact source.
- 4.1.2.6. Once source of illicit discharge is identified, field staff shall provide inspection report and investigation notes to the City Administrator to coordinate response procedures outlined in **Section 7** of this program. All investigation procedures and findings shall be documented using the IDDE Report and Response Form located in **Appendix A**. Additional documentation may be provided with form as necessary.

Table 4.1: Common Illicit Discharges and Potential Sources	
Illicit Discharge	Potential Causes
Clogging Sediment	• Construction activity without proper erosion and sediment controls • Roadway sanding operations • Outdoor work areas or material storage areas
Thick Algae Growth	• Fertilizer leak or spill • Landscaping operations • Hydroseeding following construction • Failing or leaking septic system
Oil	• Refueling operations • Vehicle or machinery maintenance activities
Sudsy Discharge	• Power washing of buildings • Vehicle or equipment washing operations • Mobile cleaning crew dumping • Laundry or Cleaner • Household greywater discharge
Clogged Grease	• Restaurant sink drain connection to stormwater system
Sewage	• Failing or leaking septic systems

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4.1.3. Equipment

Prior to conducting investigations, field staff shall assemble the equipment necessary. Table 4.2 lists common equipment needed for illicit discharge investigations.

Table 4.2: Field Equipment for Illicit Discharge Investigations	
Field Notebook/Pencils	Watch with second hand
Safety Gear – vest, work boots, cones	Flash light or head lamp
Map or Aerial Photo of Inspection Area	Tool Box – hammer, tape measure, duct tape, zip ties
Cell phone w/ charged battery	First Aid Kit
Digital camera w/ charged battery	Clear sample bottles

Section 5: Illicit Discharge Recognition Training for Field Staff

The City has developed a training schedule to meet the requirements of the NPDES Phase II Permit. Two primary training topics have been identified related to IDDE:

- Illicit discharge recognition and reporting procedures
- Illicit discharge investigation and response procedures

These trainings shall be generally conducted using materials developed for the IDDE program. Training shall include Power Point presentations, webcast material, and printed material distributed at staff meetings. The Education Work Plan and Employee Training Program outline training to be implemented by City.

Section 6: Identification of Priority Areas

Priority areas more likely to have illicit discharges have been identified by the City. Priority areas were identified through evaluation of land uses associated with certain business / industrial activities, storage areas of large quantities of significant materials, and prior illicit discharge reports.

6.1. Developing Areas to Review for Illicit Discharge Potential

Developing areas to review for illicit discharge potential is the first step in identifying priority areas for inspection. This process can be achieved through three fundamental steps:

- 6.1.1. Collection and study of all available information regarding land uses, material storage areas, and prior illicit discharges.
- 6.1.2. Performance of dry weather field screenings for non-stormwater discharges.
- 6.1.3. Review of water quality sampling and analysis for non-stormwater discharges.

6.2. Identifying Priority Areas

To identify areas with high potential for illicit discharges, the information developed in Section 6.1 shall be used to create a list of higher probability locations for illicit discharges.

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Following are potential locations that shall be reviewed in conjunction with information collected:

- 6.2.1. Locations where there have been repeated problems in the past. This includes locations with known water quality data, as well as locations where numerous complaints have been received.
- 6.2.2. Systems connected to sensitive waterbodies (e.g. drinking water sources, areas containing unique biodiversity, swimming areas, etc.)
- 6.2.3. Older neighborhoods that may contain a higher percentage of illegal connections and/or have deteriorating sewer lines.
- 6.2.4. Commercial and/or industrial neighborhoods. These areas may contain a higher percentage of illegal connections and have discharges with higher potential to affect water quality.
- 6.2.5. Areas where large quantities of materials are stored (e.g. stockpiles, vessels containing hazardous solids or liquids, etc.).
- 6.2.6. High potential land uses (e.g. restaurants, dumpsters, car washes, mechanics, and oil changers).

Priority Areas Identified by the City of Deephaven:

Using the guidelines provided above, the City has identified the following priority areas within the city limits:

- Industrial and Commercial properties. Staff is encouraged to use the Minnesota Pollution Control Agency's online search tool "What's in My Neighborhood" - <http://pca-gis02.pca.state.mn.us/wimn2/index.html> to locate businesses that have the potential to discharge contaminated pollutants to the environment within the City limits.

Section 7: Response Procedures

Illicit discharges can be revealed through routine inspections, maintenance, or reports from City staff and residents. If the discharge requires immediate action, the Immediate Response Procedures in this section shall be implemented. If the discharge does not require immediate action, an investigation shall be initiated within three (3) days. Refer to **Section 4** for Visual Inspection procedures.

7.1. Immediate Response Procedures

- 7.1.1. Field personnel shall be prepared to take immediate action in the event of encountering one of the following situations:
 - 7.1.1.1. Individuals actively in the process of introducing illegal substances or materials to the storm drain system.
 - 7.1.1.2. Very strong chemical odor emanating from storm drain system.
 - 7.1.1.3. Presence of fumes or smoke emanating from storm drain system.
 - 7.1.1.4. Visible significant stream of a controlled chemical or petroleum product flowing in storm system or downstream waters.
 - 7.1.1.5. Large chemical plume in stream or river downstream of a City outfall.

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- 7.1.1.6. Any condition that poses or could pose an immediate threat to property, human health or safety, or aquatic life.
- 7.1.2. Personnel shall take the following steps if one of the above situations is encountered:
 - 7.1.2.1. Ensure public safety by instructing people to stay clear of the area.
 - 7.1.2.2. Call **911** to report a major spill, active illegal dumping or a potential fire incident.
 - 7.1.2.3. Initiate Emergency Spill Response Procedures outlined in this section.
 - 7.1.2.4. The following offices shall be called if an unauthorized discharge of oil or hazardous material has occurred:
 - Non-Emergency Police Dispatch at 952-525-6216
 - Excelsior Fire Department at 952-401-8801
 - Minnesota Duty Officer at 651-649-5451
 - Minnehaha Creek Watershed District at 952-471-0590
 - Riley Purgatory Bluff Creek Watershed District at 952-607-6512
 - 7.1.2.5. If a spill is encountered the following information shall be recorded if possible:
 - Where.
 - What.
 - How much.
 - How concentrated is the material.
 - Who.
 - Status of cleanup.
 - Damages to resources.
 - Contact information for person reporting discharge.
 - Any notes, photos, and video that can be used for subsequent investigation.
 - 7.1.2.6. After discharge is contained, contact Minnesota Pollution Control Agency at (651) 296-6300 to determine if any additional reporting is necessary.
- 7.2. Emergency Spill Response Procedures
 - 7.2.1. Stop the spill. The leak or spill shall be stopped if this can be done safely. Hit the **Emergency Stop** button (if available), or turn off nozzles or valves from the leaking container.
 - 7.2.2. **Contain the spill.** Contain the spill if it can be done safely. Soil, sand, or granular absorbents (floor-dry/kitty litter, etc) can be used to build a berm around the flowing liquid on the ground. **Build the berm to keep the liquid from entering the storm drainage system!** Buckets, pails or other containers can be used under leaking valves or punctured tanks.
 - 7.2.3. **Recover the spill.** Once contained, the liquid must be recovered. If City personnel are trained and can perform these tasks safely, recovery shall begin immediately. Otherwise, staff shall cordon off area and maintain safe distance until personnel qualified in hazardous material recovery arrive.

If the spill has already reached water in a ditch, pond or wetland, petroleum recovery should be started using oil-only absorbent pads.

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Collect contaminated absorbents. Brooms can be used to sweep up granular absorbent material. Place into buckets, garbage cans, drums or into heavy-duty plastic bags. Remember to control ignition sources. On slippery roadways, fresh granular material such as sand or absorbents can then be re-spread on the roadway for traction. With the exception of used oil, waste generated from petroleum spills that have been reported and cleaned up immediately are exempt from Minnesota's Hazardous Waste rules.

- 7.2.4. **Arrange for disposal of the wastes.** Contact appropriate level of waste management facility for wastes created and coordinate proper disposal.

7.2.4.1. Responsibility under State law (condensed, see rule citation for complete requirements).

- *MN Stat 115.061. Duty to Notify and Avoid Water Pollution:* Report petroleum spills over 5 gallons immediately and begin cleanup immediately. Report and recover any other materials which could cause pollution to waters of the state.

For more information on spill prevention, cleanup and disposal, City personnel can contact the MPCA at (651) 296-6300 or 1-800-657-3864 and ask for a member of the Emergency Response Team or go to www.pca.state.mn.us/cleanup/pubs/ertpubs.html on the internet.

7.3. Corrective Actions

- 7.3.1. Once the source of illicit discharge has been identified, the City shall notify the property owner or operator of the problem and coordinate stopping the discharge.
- 7.3.2. Enforcement actions shall be implemented as outlined in the Enforcement Response Procedures chapter of the SWPPP.
- 7.3.3. Response Plans shall be supervised by field staff to ensure discharge is properly contained and waste properly disposed.
- 7.3.4. Voluntary compliance to address illicit discharges shall be pursued by the City for initial violations. The City shall attempt to correct violation through discussion with and education of the party responsible for the discharge prior to any other measures. Investigation report, education materials regarding illicit discharges, and recommendations for correcting illicit discharge shall be provided.
- 7.3.5. Property owners shall be held responsible for correcting operational problems that are leading to illegal discharges to the storm drainage system. This could include moving washing activities indoor or undercover, covering material storage areas, locating an appropriate discharge location for liquid wastes, or other operational modifications. The City may provide technical assistance through site visits and education to assist owners in identifying necessary modifications.
- 7.3.6. Illicit connections discovered in public right-of-way shall be re-routed to the sanitary sewer system. For illicit connections discovered on private property, the City shall hold the owner responsible for re-routing of discharge to an approved sanitary sewer system. The City may provide technical assistance through site visits and education to assist owners in identifying necessary modifications.

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Section 8: Documentation

- 8.1. Upon discovery of illicit discharge, a report shall be initiated using the IDDE Report & Response Form in **Appendix A**.
- 8.2. An incident number will be assigned using the current year and number of illicit discharge discovered within the year.
- 8.3. Additional materials (maps, photos, sketches, videos, notes, laboratory tests, correspondence, proof of corrective work completion, etc.) shall be included with report form provided.
- 8.4. An accurate log of labor, materials, and costs associated with the investigation shall be kept for potential invoicing of the responsible party
- 8.5. All documents shall be kept by the City for at least three years after the current MS4 permit expires.

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APPENDIX A

IDDE Report & Response Form

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IDDE Report & Response Form

I. Incident Report

Incident Number: _____

Date/Time: _____ AM / PM Received By: _____

Location: _____

Initial Report of Conditions: _____

Reported By: _____ Phone: _____

II. Investigation

Date: _____ By: _____

Location Description/Storm Drain ID/Outfall: _____

Discharge Entered Storm Drain System/Receiving Waters? ____ Yes ____ No

Material Type

Hazardous

Sediment

Wastewater

Oil/Grease

Other _____

Unknown

Est. Quantity: _____

Additional Information: _____

Sample(s) Collected: ____ Yes ____ No

Photo(s) Taken: ____ Yes ____ No

Observed Land Use

Residential

Commercial/Industrial Stormwater Permit ____ Yes ____ No ____ Unknown

Public

Direct/Constructed Connections Found? ____ Yes ____ No

Source Description: _____

Source/Responsible Party: _____

III. Action and Closure

Referred To: _____ Date: _____

Action Taken: _____

Date Closed: _____

APPENDIX B

Enforcement Response Procedures (ERPs)

(See this chapter in the SWPPP)

APPENDIX C

Dye Testing, Video Testing/Televising & Smoke Testing

Excerpts from The Center for Watershed Protection's:

Illicit Discharge Detection and Elimination: A Guidance Manual for Program
Development and Technical Assessments

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Chapter 13: Tracking Discharges To A Source

Table 56: Techniques to Locate the Discharge		
Technique	Best Applications	Limitations
Dye Testing	- Discharge limited to a very small drainage area (<10 properties is ideal) - Discharge probably caused by a connection from an individual property - Commercial or industrial land use	May be difficult to gain access to some properties
Video Testing	- Continuous discharges - Discharge limited to a single pipe segment - Communities who own equipment for other investigations	- Relatively expensive equipment - Cannot capture non-flowing discharges - Often cannot capture discharges from pipes submerged in the storm drain
Smoke Testing	- Cross-connection with the sanitary sewer - Identifying other underground sources (e.g., leaking storage techniques) caused by damage to the storm drain	- Poor notification to public can cause alarm - Cannot detect all illicit discharges

TIP

The Wayne County Department of the Environment provides excellent training materials on on-site investigations, as well as other illicit discharge techniques. More information about this training can be accessed from their website: http://www.wcdoe.org/Watershed/Programs___Srvcs_/IDEP/idep.htm.



Figure 63: Dye Testing Plumbing (NEIWPCC, 2003)

Dye Testing

Dye testing is an excellent indicator of illicit connections and is conducted by introducing non-toxic dye into toilets, sinks, shop drains and other plumbing fixtures (see Figure 63). The discovery of dye in the storm drain, rather than the sanitary sewer, conclusively determines that the illicit connection exists.

Before commencing dye tests, crews should review storm drain and sewer maps to identify lateral sewer connections and how they can be accessed. In addition, property owners must be notified to obtain entry permission. For industrial or commercial properties, crews should carry a letter to document their legal authority to gain

access to the property. If time permits, the letter can be sent in advance of the dye testing. For residential properties, communication can be more challenging. Unlike commercial properties, crews are not guaranteed access to homes, and should call ahead to ensure that the owner will be home on the day of testing.

Communication with other local agencies is also important since any dye released to the storm drain could be mistaken for a spill or pollution episode. To avoid a costly and embarrassing response to a false alarm,

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crews should contact key spill response agencies using a “quick fax” that describes when and where dye testing is occurring (Tuomari and Thomson, 2002). In addition, crews should carry a list of phone numbers to call spill response agencies in the event dye is released to a stream.

At least two staff are needed to conduct dye tests – one to flush dye down the plumbing fixtures and one to look for dye in the downstream manhole(s). In some cases,

three staff may be preferred, with two staff entering the private residence or building for both safety and liability purposes.

The basic equipment to conduct dye tests is listed in Table 57 and is not highly specialized. Often, the key choice is the type of dye to use for testing. Several options are profiled in Table 58. In most cases, liquid dye is used, although solid dye tablets can also be placed in a mesh bag and lowered into the manhole on a rope (Figure 64). If a

Table 57: Key Field Equipment for Dye Testing

(Source: Wayne County, MI, 2000)

Maps, Documents

- Sewer and storm drain maps (sufficient detail to locate manholes)
- Site plan and building diagram
- Letter describing the investigation
- Identification (e.g., badge or ID card)
- Educational materials (to supplement pollution prevention efforts)
- List of agencies to contact if the dye discharges to a stream.
- Name of contact at the facility

Equipment to Find and Lift the Manhole Safely (small manhole often in a lawn)

- Probe
- Metal detector
- Crow bar
- Safety equipment (hard hats, eye protection, gloves, safety vests, steel-toed boots, traffic control equipment, protective clothing, gas monitor)

Equipment for Actual Dye Testing and Communications

- 2-way radio
- Dye (liquid or “test strips”)
- High powered lamps or flashlights
- Water hoses
- Camera



Figure 64: Dye in a mesh bag is placed into an upstream manhole (left); Dye observed at a downstream manhole traces the path of the storm drain (right)

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longer pipe network is being tested, and dye is not expected to appear for several hours, charcoal packets can be used to detect the dye (GCHD, 2002). Charcoal packets can be secured and left in place for a week or two, and then analyzed for the presence of dye. Instructions for using charcoal packets in dye testing can be accessed at the following website: <http://bayinfo.tamug.tamu.edu/gbepubs/ms4.pdf>.

The basic drill for dye tests consists of three simple steps. First, flush or wash dye down the drain, fixture or manhole. Second, pop open downgradient sanitary sewer manholes and check to see if any dye appears. If none is detected in the sewer manhole after an hour or so, check downgradient storm drain manholes or outfalls for the presence of dye. Although dye testing is fairly straightforward, some tips to make testing go more smoothly are offered in Table 59.

Table 58: Dye Testing Options	
Product	Applications
Dye Tablets	• Compressed powder, useful for releasing dye over time • Less messy than powder form • Easy to handle, no mess, quick dissolve • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Liquid Concentrate	• Very concentrated, disperses quickly • Works well in all volumes of flow • Recommended when metering of input is required • Flow mapping and tracing in storm and sewer drains • Plumbing system tracing • Septic system analysis • Leak detection
Dye Strips	• Similar to liquid but less messy
Powder	• Can be very messy and must dissolve in liquid to reach full potential • Recommended for very small applications or for very large applications where liquid is undesirable • Leak detection
Dye Wax Cakes	• Recommended for moderate-sized bodies of water • Flow mapping and tracing in storm and sewer drains
Dye Wax Donuts	• Recommended for large sized bodies of water (lakes, rivers, ponds) • Flow mapping and tracing in storm and sewer drains • Leak detection

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Table 59: Tips for Successful Dye Testing
(Adapted from Tuomari and Thompson, 2002)

Dye Selection

- Green and liquid dyes are the easiest to see.
- Dye test strips can be a good alternative for residential or some commercial applications. (Liquid can leave a permanent stain).
- Check the sanitary sewer before using dyes to get a "base color." In some cases, (e.g., a print shop with a permitted discharge to the sanitary sewer), the sewage may have an existing color that would mask a dye.
- Choose two dye colors, and alternate between them when testing multiple fixtures.

Selecting Fixtures to Test

- Check the plumbing plan for the site to isolate fixtures that are separately connected.
- For industrial facilities, check most floor drains (these are often misdirected).
- For plumbing fixtures, test a representative fixture (e.g., a bathroom sink).
- Test some locations separately (e.g., washing machines and floor drains), which may be misdirected.
- If conducting dye investigations on multiple floors, start from the basement and work your way up.
- At all fixtures, make sure to flush with plenty of water to ensure that the dye moves through the system.

Selecting a Sewer Manhole for Observations

- Pick the closest manhole possible to make observations (typically a sewer lateral).
- If this is not possible, choose the nearest downstream manhole.

Communications Between Crew Members

- The individual conducting the dye testing calls in to the field person to report the color dye used, and when it is dropped into the system.
- The field person then calls back when dye is observed in the manhole.
- If dye is not observed (e.g., after two separate flushes have occurred), dye testing is halted until the dye appears.

Locating Missing Dye

- The investigation is not complete until the dye is found. Some reasons for dye not appearing include:
- The building is actually hooked up to a septic system.
- The sewer line is clogged.
- There is a leak in the sewer line or lateral pipe.

Video Testing

Video testing works by guiding a mobile video camera through the storm drain pipe to locate the actual connection producing an illicit discharge. Video testing shows flows and leaks within the pipe that may indicate an illicit discharge, and can show cracks and other pipe damage that enable sewage or contaminated water to flow into the storm drain pipe.

Video testing is useful when access to properties is constrained, such as residential neighborhoods. Video testing can also be expensive, unless the community already owns and uses the equipment for sewer inspections. This technique will not detect all types of discharges, particularly when the illicit connection is not flowing at the time of the video survey.

Different types of video camera equipment are used, depending on the diameter and condition of the storm sewer being tested.

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Field crews should review storm drain maps, and preferably visit the site before selecting the video equipment for the test. A field visit helps determine the camera size needed to fit into the pipe, and if the storm drain has standing water.

In addition to standard safety equipment required for all manhole inspections, video testing requires a Closed-Circuit Television (CCTV) and supporting items. Many commercially available camera systems are specifically adapted to televise storm sewers, ranging from large truck or van-mounted systems to much smaller portable cameras. Cameras can be self-propelled or towed. Some specifications to look for include:

- The camera should be capable of radial view for inspection of the top, bottom, and sides of the pipe and for looking up lateral connections.
- The camera should be color.
- Lighting should be supplied by a lamp on the camera that can light the entire periphery of the pipe.

When inspecting the storm sewer, the CCTV is oriented to keep the lens as close as possible to the center of the pipe. The camera can be self-propelled through the pipe using a tractor or crawler unit or it may be towed through on a skid unit (see Figures 65 and 66). If the storm drain



Figure 65: Camera being towed

has ponded water, the camera should be attached to a raft, which floats through the storm sewer from one manhole to the next. To see details of the sewer, the camera and lights should be able to swivel both horizontally and vertically. A video record of the inspection should be made for future reference and repairs (see Figure 67).

Smoke Testing

Smoke testing is another "bottom up" approach to isolate illicit discharges. It works by introducing smoke into the storm drain system and observing where the smoke surfaces. The use of smoke testing to detect illicit discharges is a relatively new application, although many communities have used it to check for infiltration and inflow into their sanitary sewer network. Smoke testing can find improper



Figure 66: Tractor-mounted camera



Figure 67: Review of an inspection video

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connections, or damage to the storm drain system (Figure 68). This technique works best when the discharge is confined to the upper reaches of the storm drain network, where pipe diameters are too small for video testing and gaining access to multiple properties renders dye testing infeasible.

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):

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

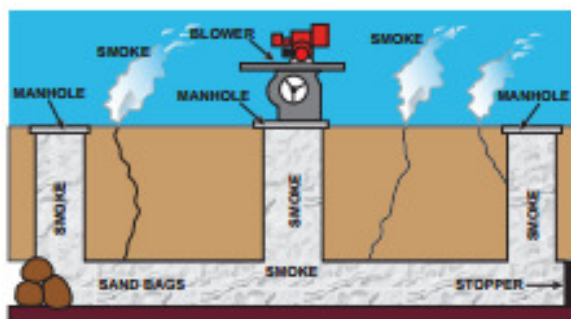


Figure 68: Smoke Testing System Schematic

Program managers should also notify local media to get the word out if extensive smoke testing is planned (e.g., television, newspaper, and radio). On the actual day of testing, local fire, police departments and 911 call centers should be notified to handle any calls from the public (Hurco Technologies, Inc., 2003).

The basic equipment needed for smoke testing includes manhole safety equipment, a smoke source, smoke blower, and sewer plugs. Two smoke sources can be used for smoke testing. The first is a smoke “bomb,” or “candle” that burns at a controlled rate and releases very white smoke visible at relatively low concentrations (Figure 69). Smoke bombs are suspended beneath a blower in a manhole. Candles are available in 30 second to three minute sizes. Once opened, smoke bombs should be kept in a dry location and should be used within one year.

The second smoke source is liquid smoke, which is a petroleum-based product that is injected into the hot exhaust of a blower where it is heated and vaporized (Figure 70). The length of smoke production can vary depending on the length of the pipe being



Figure 69: Smoke Candles

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Figure 70: Smoke blower

tested. In general, liquid smoke is not as consistently visible and does not travel as far as smoke from bombs (USA Blue Book).

Smoke blowers provide a high volume of air that forces smoke through the storm drain pipe. Two types of blowers are commonly used: “squirrel cage” blowers and direct-drive propeller blowers. Squirrel cage blowers are large and may weigh more than 100 pounds, but allow the operator to generate more controlled smoke output. Direct-drive propeller blowers are considerably lighter and more compact, which allows for easier transport and positioning.

Three basic steps are involved in smoke testing. First, the storm drain is sealed off by plugging storm drain inlets. Next, the smoke is released and forced by the blower through the storm drain system. Lastly, the crew looks for any escape of smoke above-ground to find potential leaks.

One of three methods can be used to seal off the storm drain. Sandbags can be lowered into place with a rope from the street surface. Alternatively, beach balls that have a diameter slightly larger than the drain can be inserted into the pipe. The beach ball is then placed in a mesh bag with a

rope attached to it so it can be secured and retrieved. If the beach ball gets stuck in the pipe, it can simply be punctured, deflated and removed. Finally, expandable plugs are available, and may be inserted from the ground surface.

Blowers should be set up next to the open manhole after the smoke is started. Only one manhole is tested at a time. If smoke candles are used, crews simply light the candle, place it in a bucket, and lower it in the manhole. The crew then watches to see where smoke escapes from the pipe. The two most common situations that indicate an illicit discharge are when smoke is seen rising from internal plumbing fixtures (typically reported by residents) or from sewer vents. Sewer vents extend upward from the sewer lateral to release gas buildup, and are not supposed to be connected to the storm drain system.

13.4 Septic System Investigations

The techniques for tracing illicit discharges are different in rural or low-density residential watersheds. Often, these watersheds lack sanitary sewer service and storm water is conveyed through ditches or swales, rather than enclosed pipes. Consequently, many illicit discharges enter the stream as indirect discharges, through surface breakouts of septic fields or through straight pipe discharges from bypassed septic systems.

The two broad techniques used to find individual septic systems—on-site investigations and infrared imagery—are described in this section.

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APPENDIX D

Illicit Discharge Detection and Elimination Ordinance

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CHAPTER 10
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CHAPTER 10. WATER AND SEWER

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- 1000.05 Fees and Permits
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 - Subd. 2. Excavation Permit
 - Subd. 3. Connection and Meter Charge
 - Subd. 4. Service Charges

- 1000.06 Rates and Charges
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CHAPTER 10. WATER AND SEWER

SECTION 1000 MUNICIPAL WATER SYSTEM

1000.01 General. The municipal water system in Deephaven will be operated as a public utility, and all revenues and operating expenditures of the utility will be properly accounted for in a separate municipal water fund. The Council may establish fees for connection to and use of the municipal water system from time to time by ordinance or resolution.

1000.02 Operation, Records and Inspections. The City will:

- (a) Provide for operation and maintenance of the municipal water system.
- (b) Keep records of the location and size of facilities which are part of the municipal water system, connections to the water system, and other measurements or records which may be necessary.
- (c) Inspect connections for service and installation of meters.

1000.03 Applications for Service. Any property owner desiring to connect a dwelling, building, or other structure to the municipal water system may apply to the City on a form provided by the City. The form will call for such information as the Council may from time to time require. Each applicant by applying agrees to be bound by all provisions of this Section, amendments thereto and all rules and regulations established by the City, and the applicant will pay the appropriate fee or fees as set forth in Section 405.05.

1000.04 Connection Permits, Special Assessments. No permit will be issued to connect with the municipal water system, either directly or indirectly, from any lot or tract of land unless the Clerk has certified as to one of the following:

- (a) That the lot or tract of land to be served has been assessed for its share of the cost of the system.
- (b) If no assessment has been levied for the water system, that proceedings for levying the assessment have been or are expected to be commenced in due course.
- (c) That no assessment has been levied and no assessment proceedings will be completed in due course, but a connection fee equal to the amount which would be assessable against the lot or tract of land has been paid to the City.
- (d) That since the time of the original assessment proceedings the lot or tract of land originally assessed has been further subdivided, and that a sum equal to the appropriate share of the cost of constructing the system, in comparison with other premises, which would have been assessable against the lot or tract, has been paid to the City.

1000.05 Fees and Permits.

Subd. 1. Plumbing Permit. No person may commence any plumbing work of any kind where a permit is necessary without obtaining the permit and complying with it.

Subd. 2. Excavation Permit. An excavation permit is required if any part of the excavation for municipal water is within a City street or right-of-way.

Subd. 3. Connection and Meter Charge. The connection charge and the meter charge must be paid at the time application for service is made and before the service is installed. No water will be turned on until such charges are paid.

Subd. 4. Service Charges. The City may require the payment of service charges for turning water on or off at the request of the property owner or for raising or lowering stop box tops to correspond with ground level changes made by the property owner.

1000.06 Rates and Charges.

Subd. 1. Rates. Rates and charges for water from a municipal system and for maintenance and operation of a municipal system will be as set forth in Section 405.05.

Subd. 2. Owner Liability. The owner of the property (during his respective period of ownership) is liable for all bills accruing through the use of water on the property whether the water is personally used by the owner, a tenant, or any other occupant of the property.

Subd. 3. Statements. Statements for water charges for a quarter or other billing period established by the Council will be mailed to the owner after the first day of the next quarter or other such period and will include any amount due for repairs of meters, fines, penalties or other indebtedness. The statement will be deemed sufficient notice to the consumer and to the owner of the property against which the charges are made. The statement is due and payable to the City on or before the end of the month in which it is sent.

Subd. 4. Shut-Off for Non-Payment. At the end of 30 days after the date of the statement all bills not paid will become delinquent and a delinquency charge in the amount provided in Section 405.05 will be added to the amount owing. The City will notify each delinquent owner or consumer or, in case they cannot be found, then the person in charge of the premises, of the amount owing. If the amount owing is not paid within 10 days after such notice, the City may notify the delinquent owner or consumer or the person in charge of the premises that the water service will be shut off. In all cases where satisfactory arrangements for payment have not been made within 72 hours after the City's notice, instructions may be given by the City to shut off service at the stop box.

Subd. 5. Procedure for Shut-Off. Water will not be shut off under Subdivision 4 until notice and an opportunity for a hearing have first been given the occupant of the premises involved. The notice will be personally served and will state that if payment is not made before a date stated in the notice but not less than 10 days after the date on which the notice is given, the water supply to the premises will be shut off. The notice will clearly inform the customer of the available opportunities to present objections to the bill, and will identify the telephone number, address, and officer or employee who will handle the customer's complaint and who has the authority to review the facts and files, to correct any errors in the billing and to arrange for credit terms. The notice will also state that the occupant may before such date demand a hearing on the matter, in which case the supply will not be cut off until after the hearing is held. If the customer requests a hearing before the date specified, a hearing will be held on the matter by the Council at least one week after the date on which the request is made. If as a result of the hearing, the Council finds that the amount claimed to be owing is actually due and unpaid and that there is no legal reason why the water supply of the delinquent customer may not be shut off in accordance with this Code, the City may shut off the supply.

Subd. 6. Delinquent Bills. Charges for municipal water plus 8% interest, plus charges for delinquencies may be collected in an action brought for that purpose in the name of the City, or the Clerk may certify to the County Auditor the amount due plus a delinquency charge of \$5.00

for each delinquent quarterly bill, and an assessment fee of \$20.00 for each delinquency assessed, together with the legal description of the premises served, and the County Auditor will enter such amount with the tax levy on said premises collectible with the taxes for the ensuing year. Nothing in this subdivision will change the provisions of this Section regarding shutting off water for the nonpayment of a water bill.

Subd. 7. Procedure for Owner's Notification to Turn-Off. An owner may notify the City to turn off water service, and the meter will be read to determine the final bill.

Subd. 8. Surcharge. In addition to the rates and charges referred to in Subd. 1 of this Section, a surcharge in the amount set forth in Section 405.05 shall be paid for each service connection, to be remitted to the Minnesota Department of Health as prescribed by Laws of Minnesota 1992, Chapter 513, Article 6, Section 2.

1000.07 Sprinkling Limitations. The use of lawn hoses is permitted at all hours of the day, but in case of fire in any area served by the water system, all lawn hoses must be shut off and all other unnecessary use of water stopped. Whenever the City determines that a shortage of water threatens the City, it may, by published notice, limit the times and hours during which water may be used from the City water system for lawn or garden sprinkling, irrigation, car washing, swimming pools, air conditioning or other uses. Notice of a violation of the published notice will be mailed to the violator and violation of the mailed notice is prohibited. Any water customer who causes or permits water to be used in violation of the provisions of this notice two days after its mailing may have water service discontinued.

1000.08 Meters.

Subd. 1. Charges. The City will exclusively own, control and supply the water meters to be used in the City water system. The meter will be replaced or changed by the customer's licensed contractor as to size and type whenever the City deems necessary. A meter charge will be made to each consumer connecting to the City water system after the date the City acquired ownership of the same. This charge will be in the amount set forth in Section 405.05.

Subd. 2. Meter Reading. The City or its authorized agent will keep an accurate record of each meter in use, cause all meters to be read approximately quarterly, or more often at the discretion of the Council, and calculate the amount of water used by each consumer.

Subd. 3. Damaged Meter. If a meter is damaged by freezing, hot water, or other cause, by carelessness or neglect of the owner or occupant of the premises or their agents, the owner will pay for repair of the meter. The cost of ordinary maintenance and repair of meters owned by the City will be borne by the City.

Subd. 4. Meter Testing. At the written request of any owner or consumer, the City will test the meter supplying the premises of the owner or consumer. A deposit as set by the Council will be required before the meter is disconnected. The deposit will be returned to the owner or consumer if the meter is in error by 10% or more, otherwise the deposit will be retained by the City to cover the cost of the test. The owner or consumer may be present at the time the test is made. The result of the test will be reported to such owner or consumer.

Subd. 5. Charge Adjustment. If testing of a meter indicates that it registers in excess of 10% error, the charge for water used during the quarter in which the test was made will be based on the corresponding quarter for the previous year. If the water was not in use during the corresponding quarter of the previous year, or if that quarterly period otherwise cannot be justly

applied, the charge for the quarter in which the test occurred will be equitably adjusted by the Council. Any other adjustment of charges for water supplied will be made by the Council.

Subd. 6. Meter Required. No person may use City water until a meter supplied by the City registers all water consumed, and the City determines that all other parts of the plumbing and pipe fittings in and about the premises are in full compliance with the requirements of the City.

Subd. 7. Meter Placement. The bottom of each water meter may be no less than 4 inches, or more than 12 inches, from the top of the finished basement floor line, and the meter may not be set more than 12 inches, measured horizontally, from the inside line of the basement wall.

Subd. 8. Meter Installation. All meter installations must have valves on both the house side and the main side of the meter.

Subd. 9. Connections. The water pipe connecting with the City watermain may have no joints under the basement or slab floor.

Subd. 10. Meter Obstructions Prohibited. No person may obstruct a meter so as to interfere with the reading or repairing of the meter.

1000.09 Access to Premises. The City Inspector, or the City of Minnetonka Inspector, or the Shorewood Inspector so designated, and other duly authorized employees of the City of Deephaven, Minnetonka or Shorewood, bearing proper identification, may at reasonable times enter upon all properties for the purpose of inspection, observation, sampling and testing in connection with the operation of the City water system. The City will notify the owner or occupant in writing of any required repairs. If required repairs are not made within 10 days, the City may shut off the water.

1000.10 Connections.

Subd. 1. Permit Required. No person may make an attachment to any pipe or water fixture in any premises in which water has been shut off, or make any connection with any service pipe which is not in use between the watermain and the meters, without applying to and obtaining from the City a written permit for the work. No person may make any replacement tap or connect any tap in any watermain without first removing the old service and plugging the old watermain tap hole.

Subd. 2. Measurements. The applicant will assist the City in making any measurements necessary in locating the tap in the main and curb cock.

Subd. 3. Minimum Size. The minimum size water service is one-inch tube of any material permitted by the State Plumbing Code with the exception of type "L" copper, which is not permitted. Plastic services must be a minimum of 160 P.S.I. rating. Cast iron pipe will not be permitted in the system. No flared fittings will be permitted on plastic services.

Subd. 4. Service Pipes. The corporation cock inserted in the distributing pipe must be of the size specified on the permit order. Every copper service pipe must be laid with not less than one foot of extra length to prevent rupture by settlement. Service pipes must be placed not less than 7-1/2 feet below the surface in all cases, so arranged as to prevent rupture from freezing.

Subd. 5. Stop Cock. A stop cock accessible from the surface through a sleeve without digging must be placed outside in a box at the property line, and a shutoff or other stop cock with waste of the size and strength required must be placed close to the inside wall of the building, well

protected from freezing. All stop boxes and cocks must be approved by the City. All stop boxes at the property line must be set in front of the building intended to be supplied or as approved by the City.

Subd. 6. Service Line. The service line must enter the building so that the meter and horn is in a horizontal position. In no case may there be more than 12 inches of pipe exposed between the point of the entrance through the basement floor and the stop and waste, and the stop and waste must be connected directly to the meter.

1000.11 Stop Box City Property. The stop cock at main and property or curb line, together with box and cover, are the property of the City and all unauthorized persons are forbidden to interfere with them.

1000.12 Water Service, Freezing Weather. The water service to a building may not be turned on in freezing weather unless the temperature within the building is 50 degrees or more.

1000.13 Connection Prohibited.

Subd. 1. Number Per Pipe. No more than one building or dwelling unit on a lot or tract of land may be supplied from one water service pipe except by special permission of the City. If two or more buildings or units are supplied from one connection to the main, each must have a separate stop box at the property line.

Subd. 2. City Water Supply Only. No water pipe of the City water supply system may be connected with any pump, well pipe or tank that is connected with any source of water supply other than the City water system.

1000.14 Breaks, Interrupted Service. No claim may be made against the City for the breaking of any watermain or service pipe or fixture or for any other interruption of the supply or stoppage for repair.

1000.15 Tampering with System Prohibited. No person may maliciously, willfully, or negligently, break, damage, destroy, uncover, deface or tamper with any structure, appurtenance or equipment which is a part of the City water system.

1000.16 Opening Hydrants. No person, except authorized employees of the City of Deephaven, or the City of Minnetonka, or the City of Shorewood or a member of the Fire Department in case of fire, will be allowed to open any fire hydrant in the water system for any purpose whatsoever, without first securing authorization from the City.

1000.17 Variances. The Council may permit variances from provisions of this Section if it is satisfied that there are special circumstances or conditions affecting the premises for which the variance is requested and that the granting of the variance will not materially adversely affect the health, safety or general welfare or public or private property.

SECTION 1005 SEWER REGULATIONS

1005.01 Connection Permit.

Subd. 1. Permit Fee. A permit must be obtained to connect to the sewer at existing wyers, risers, or service lines. The fee for such permit is set forth in Section 405.05.

Subd. 2. Additional Charges. Additional charges will be made and collected for tapping and making connections with the sewer main where a house connection is not installed. The amount to be charged will be fixed by the Utility Superintendent based upon the cost of installing the service.

1005.02 Sewer Rates.

Subd. 1. Residential Properties. The sewer charge for each residential sewer user within the City is the amount set forth in Section 405.05. If a residential sewer user occupies a seasonal residence for a period of less than six consecutive months in any calendar year, such person may request a reduction in the charge. In such case, the sewer charge will be an amount equal to the regular charge for six months. For purposes of this Subdivision, the term "seasonal residence" means a residence which is not constructed for year-round occupancy because it is not winterized or because it does not have an adequate heating system. The question of whether a residence is a seasonal residence will be determined by the City Building Inspector. Requests for such reduction will be addressed to the Clerk in writing and will give the property identification number of the residence in question as taken from the tax statement or County list.

Subd. 2. Commercial and Industrial Properties. The sewer charge for each commercial property and industrial property is the amount equal to the charge for each residential sewer user, as set forth in Section 405.05, multiplied by the residential equivalent for the commercial or industrial property as determined by the City Engineer based upon estimated quantities; provided, however, that the Engineer or the property owner may demand installation of a meter or other measuring device to measure water use or discharge to the sewer. No such meter may be installed unless approved by the City Engineer. If the meter is installed at the request of the owner, it must be paid for by the owner. If the meter is installed at the request of the City Engineer, it will be paid for by the City.

Subd. 3. Mixed Properties. Establishments which are a combination residential and commercial will be charged per unit in accordance with Subdivision 1, or with Subdivision 2, whichever is higher.

Subd. 4. Billing. Sewer bills will be mailed to the customers and will specify the charge in accordance with the foregoing rates. Payment is due and payable in full upon receipt of the bill.

1005.03 Delinquent Accounts. If sewer charges are not paid within 30 days of the issuance of a statement from the City, a delinquency charge of \$5.00 per quarter will be added. All unpaid charges plus the delinquency charges which remain unpaid on September 15, together with an assessment fee of \$20.00 may be assessed by the City against the property served and will become a lien upon the property when assessed. The Clerk will prepare an assessment roll each year which will assess the delinquent sewer charges plus the additional charges against the respective properties served. The assessment roll will be submitted by the Clerk to the Council for adoption on or before October 10 of each year.

1005.04 Sewer System Regulations.

Subd. 1. Definitions. Unless the context specifically indicates otherwise, the following terms will have the meanings ascribed to them in this Section:

- (a) "BOD" (denoting Biochemical Oxygen Demand) means the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five days at twenty degrees Centigrade, expressed in milligrams per liter.
- (b) "Building Drain" means that part of the lowest piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building and conveys it to a building sewer and which extends five (5) feet beyond the outside of the building footings.
- (c) "Building Sewer" means the extension from the outer end of the building drain to the public sewer or other place of disposal.
- (d) "Garbage" means solid wastes from the domestic and commercial preparation, cooking and dispensing of food, and from the handling, storage and sale of produce.
- (e) "Industrial Wastes" means any liquid, or water borne wastes resulting from any process of industry, or manufacturing, trade or business.
- (f) "Natural Outlet" means any outlet to a watercourse, pond, ditch, lake or other body of surface or groundwater.
- (g) "pH" means the logarithm of the reciprocal of the weight of hydrogen ions in grams per liter of solution.
- (h) "Pollution" means the contamination of any waters 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, commercial, industrial or recreational use, or to livestock, wild animals, birds, fish or other aquatic life.
- (i) "Properly Shredded Garbage" means garbage that has been shredded to such a degree that all particles thereof will be carried freely under the flow conditions normally prevailing in public sewers.
- (j) "Public Sewer" means a sewer in which all owners of abutting properties have equal rights, and which is controlled by public authority.
- (k) "Sanitary Sewer" means a sewer which carries sewage or industrial wastes and to which storm, surface, and ground waters are not intentionally admitted.
- (l) "Sewage" means any liquid wastes containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.
- (m) "Sewage Treatment Plant" means any arrangement of devices and structures used for treating sewage and industrial wastes.
- (n) "Sewage Works" means all facilities and equipment for collecting, pumping, treating and disposing of sewage and industrial wastes.

- (o) "Sewer" means a pipe or conduit for carrying sewage or industrial wastes.
- (p) "Slug" means any discharge of water, sewage or industrial waste which in concentration of any given constituent or in quantity of flow exceeds for any period longer than fifteen (15) minutes more than five (5) times the average twenty-four (24) hour concentration or flows during normal operation.
- (q) "Storm Drain" means a building drain which conveys storm water but not sewage.
- (r) "Suspended Solids" means solids that either float on the surface of, or are in suspension in water, sewage or other liquids, and which are removable by laboratory filtering.
- (s) "Watercourse" means a channel in which a flow of water occurs, either continuously or intermittently.

Subd. 2. Use of Public Sewers Required.

- (a) No person may place, deposit or permit to be deposited in any unsanitary manner on public or private property within the jurisdiction of the City any sewage, industrial wastes, garbage or other polluted waters or wastes.
- (b) No person may discharge to any natural outlet within the jurisdiction of the City any sewage, industrial wastes, garbage or other polluted waters or wastes.
- (c) No person may repair, construct, reconstruct or pump a private sewer system where public sewer is available, without permission of the Utility Superintendent.

Subd. 3. Building Sewers and Connections.

- (a) No person may uncover, make any connections with or opening into, use, alter or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Clerk.
- (b) All costs and expense incident to the installation and connection of a building sewer will be borne by the person making the installation and connection. The person will indemnify and hold harmless the City from any loss, claim, damage or expense that may, directly or indirectly, be occasioned by the installation and connection of a building sewer.
- (c) Only new building sewer utility lines shall be used in connection with new buildings.
- (d) The size, slope, alignment, materials of construction of a building sewer and the methods to be used in excavating, place of the pipe, jointing, testing and backfilling the trench, must all conform to the requirement of the building and plumbing code and the utility regulations of the City.
- (e) No person may connect directly or indirectly roof downspouts, exterior foundation drains, areaway drains or other sources of storm water, ground water, roof runoff, surface water and unpolluted drainage to a building drain which, in turn, is connected, directly or indirectly, to a public sanitary sewer.
- (f) The connection of the building sewer into the public sewer must conform to the requirement of the building and plumbing code and the utility regulations of the City. Any

deviation from the prescribed procedures and materials must be approved in writing by the City Engineer before installation and connection.

- (g) All excavations for building sewer installation must be adequately guarded with barricades and lights by the person making the installation so as to protect the public from hazard. Streets, sidewalks, parkways and other public property disturbed due to the work must be restored in a manner satisfactory to the City by the person making the installation.

Subd. 4. Use of Public Sewers.

- (a) No person may cause to be discharged any storm water, ground water, roof runoff, surface water, unpolluted drainage, unpolluted industrial cooling water or unpolluted industrial process water to any public sanitary sewer:
 - (1) No roof runoff, downspout, drainpipe, sump dump, swimming pool discharge, or surface water drainage shall be connected to the sanitary sewer system, inside or outside a building.
 - (2) Any property in violation of this Subdivision 4(a) must be brought into compliance prior to September 1, 1994.
 - (3) Each sump pump must have a discharge pipe with at least one inch inside diameter and permanent fittings extending at least three feet outside of the foundation wall and directed toward the front yard or rear yard of the property.
 - (4) Every person owning improved property connected to the City's sanitary sewer system shall allow City inspectors to inspect the buildings to determine whether there is any prohibited discharge into the sanitary sewer system. If such access is not permitted, the property will be imposed with the surcharge described in subparagraph (5) below. The owner of any property found to violate this Section shall make the necessary changes to comply with this Section within 30 days after notice from the City and such changes must be verified by the City.
 - (5) A surcharge of \$75.00 per month is imposed and will be added to every sewer billing mailed after October 1, 1994, to property owners who are not in compliance with this Section. The surcharge will be added every month, until the property is in compliance. The surcharge will in no way limit the right of the City to seek an injunction ordering the property owner to disconnect the nonconforming connection to the sanitary sewer system or from pursuing any other legal remedies available.
- (b) Storm water, ground water, roof runoff, surface water, or unpolluted drainage may be discharged only to specifically designated storm drains or to a natural outlet approved by the City Engineer. Unpolluted industrial cooling water or unpolluted industrial process water may be discharged, on written approval of the City Engineer, to a storm drain or natural outlet.
- (c) No person may cause to be discharged any of the following described waters or wastes to any public sewer:
 - (1) Any gasoline, benzene, naphtha, fuel oil or other flammable or explosive liquids, solids or gases.

- (2) Any waters or wastes containing toxic or poisonous solids, liquids or gases in sufficient quantity, either singly or by interaction with other waters or wastes, to injure or interfere with any sewage treatment process, to constitute a hazard to humans or animals, to create a nuisance or to create any hazard in the receiving waters of the sewage treatment plant, including but not limited to cyanides in excess of two (2) milligrams per liter as CN in the wastes as discharged to the public sewer.
 - (3) Any waters or wastes having a pH lower than (5.5), or having any other corrosive property capable of causing damage or hazard to structures, equipment and personnel of the sewage works or the sewage treatment plant.
 - (4) Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the sewage works or sewage treatment plant such as, but not limited to, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, garbage, whole blood, manure, hair and fleshing, entrails, and any paper dishes, cups or other paper containers or paper products, whether whole or ground by garbage grinders.
 - (5) Other substances in amounts in excess of the concentrations permitted under Rules and Regulations of the Metropolitan Sewer Board.
- (d) No person may cause to be discharged any of the following described waters or wastes to any public sewer unless the person has a permit from the City Engineer specifically authorizing the discharge of such water or waste and unless the conditions, if any, set forth in the permit have been complied with by such person:
- (1) Any waters or other liquid or vapor having a temperature higher than one hundred fifty degrees Fahrenheit (65 C).
 - (2) Any waters or wastes containing fats, wax, grease, or oils, whether emulsified or not, in excess of one hundred (100) milligrams per liter or containing substances which may solidify or become viscous at temperatures between thirty-two and one hundred fifty degrees Fahrenheit (0 and 65 C).
 - (3) Any garbage that has not been properly shredded.
 - (4) Any waters or wastes containing pickling wastes or concentrated plating solutions.
 - (5) Any waters or wastes containing iron, chromium, copper, zinc and similar substances in such concentrations so as to cause the waters or wastes to be objectionable or toxic.
 - (6) Any waters or wastes exerting a chlorine requirement or demand such that when the waters or wastes are received in the composite sewage at the sewage treatment plant, the chlorine requirement or demand of the composite sewage exceeds reasonable limits.
 - (7) Any waters or wastes containing phenols or other taste or odor producing substances in concentrations which exceed reasonable limits in view of the

applicable requirements of the state, federal or other public agencies having jurisdiction over effluent discharge to the receiving waters.

- (8) Any radioactive wastes or isotopes of such half-life or concentration as may exceed reasonable limits in view of the applicable State or Federal regulations.
 - (9) Any waters or wastes having a pH in excess of (9.5).
 - (10) Materials which exert or cause:
 - (i) Concentrations of inert suspended solids, such as, but not limited to, Fullers earth, sand, lime, slurries and lime residues, or of dissolved solids, such as, but not limited to, sodium chloride and sodium sulfate, which are likely to be harmful to the sewer, sewer works or sewage treatment plant.
 - (ii) Excessive discoloration, such as, but not limited to, dye wastes and vegetable tanning solutions.
 - (iii) Unusual BOD or chemical oxygen demand in such quantities as to constitute a significant load on the sewage treatment plant.
 - (iv) Unusual volume of flow or concentration of waters or wastes constituting "slugs" as defined herein.
 - (11) Waters or wastes containing substances which are not amenable to treatment or reduction by the sewage treatment processes utilized by sewage treatment plants, or are amenable to treatment only to such degree that the sewage treatment plant effluent cannot meet the requirements of the state, federal or other public agencies having jurisdiction over effluent discharge to the receiving waters.
- (e) Where pretreatment or flow-equalization facilities and/or where grease, oil or sand interceptors are provided for any waters or wastes, such facilities and/or interceptors must be maintained continuously in satisfactory and effective operation by the user at no expense to the City.
 - (f) The owner of any property having a building sewer into which industrial wastes are discharged must install a suitable control structure together with any necessary meters and other appurtenances in the building sewer to facilitate observation, sampling and measurement of the industrial wastes. Such structure, when required, must be accessibly and safely located and will be constructed in accordance with plans approved by the City Engineer. The structure will be installed by the owner at his expense, and will be maintained by him so as to be safe and accessible at all times.
 - (g) All measurements, tests and analyses of the waters and wastes discharged to a public sewer will be determined in accordance with the latest edition of "Standard Methods of the Examination of Water and Wastewater", published by the American Public Health Association, and will be determined at the control structure provided, or if no special control structure has been provided, at the nearest downstream manhole in the public sewer from the point at which the building sewer is connected to the public sewer. Sampling will be carried out by customarily accepted methods under the direction of the City Engineer to reflect the effect of the waters and wastes upon the sewers, sewage

works and the sewage treatment plant and to determine the existence of hazards to public health, safety and welfare.

- (h) Notwithstanding any other provision in this Section, the City may enter into a valid agreement with any person whereby industrial wastes and/or sewage of unusual strength or character may be discharged to a public sewer and accepted by the sewage treatment plant, subject to the payment of special charges to the City by the person; and provided that the City gives its prior, written approval to the special agreement.

1005.05 Right to Enter. The duly authorized employees or representatives of the City bearing proper credentials and identification will have the right to enter all properties served by the City's sewer system for the purpose of inspection, observation, measurement, sampling and testing in accordance with and for the purpose of enforcing the provisions of this Section. The employees or representatives will have the power and authority to obtain a warrant to secure entry onto a property and will obtain a warrant to enter any property upon which entry has been refused. The employees or representatives have no authority to inquire into any industrial processes beyond that point in the process having a direct bearing on the kind and source of discharge to the sewers or waterways or facilities for treatment.

1005.06 Remedies.

Subd. 1. Responsibilities and Rights. Each person who connects with a public sewer located in the City is deemed to have agreed to and will indemnify and hold harmless the City with respect to all costs, damages and expenses, including penalties and special charges assessed by the sewage treatment authority against the City resulting, directly or indirectly, from a violation of 1005.06 Subdivisions 1 through 4, inclusive. The City will also have the right to institute an action for all costs, damages and expenses resulting, directly or indirectly, from a violation of these provisions.

Subd. 2. City's Rights. Notwithstanding any other provision of this Section, the City will have the right to seek injunctive relief from a continuing violation of the provisions of 1005.06, Subdivisions 1 through 4, inclusive. It will also have the right to institute an action for all costs, damages and expenses resulting, directly or indirectly, from a violation of these provisions.

1005.07 Discontinuance of Service. Sewer service will be discontinued when it is determined that a sum equal to the portion of the cost of constructing the sewer system attributable to the parcel or property as determined by assessment proceedings or pursuant to the provisions of 1005.03, Subdivision 2 has not been paid or is not in the process of being paid in regular installments.

1005.08 Liability. Each user or owner is responsible for maintaining and cleaning the sewer connection from his house to the sewer main. The City will not be liable for any stoppages in the sewer system. Each user must provide a suitable back water valve to prevent flooding of basements in the event of sewer stoppage.

1005.10 One House Per Connection. Not more than one house or building may be supplied from one sewer connection, except through the action of the Deephaven City Council.

1005.11 Building Sewers. All building sewer connections must be made to the wye or riser provided for that purpose. No sewer connection may be laid in the same trench with water, gas or any other pipe and all sewer connections must be laid far enough from all others to permit the repair or removal or relaying of any one without disturbing the other, unless an alternate method is provided by the City Engineer.

At the time any connection is made to the City sanitary sewer system, all cesspools, septic tanks, or other sewage disposal facilities existing on the property which is connected must be pumped and then filled to earth level with suitable material. Such pumping and filling is not required if the tank or facility is constructed of concrete. The determination of whether the tank or facility is constructed of concrete will be made by the City Inspector by visual inspection of the tank or facility or by reference to appropriate City records. Piping through cesspools and septic tanks will be on the house side of the cesspools or tank, unless an alternate method is approved by the City Engineer.

All sewer connections must be made by a competent property owner or licensed contractor. Building sewers must conform with all utility regulations as to materials, depths of cover slope, and water tightness. No connection may be covered or otherwise concealed from sight until inspected and approved by the City Inspector. A drawing of the location of the sewer connection from the house to the sewer main as built will be furnished by the owner and maintained by the City in its files.

1005.12 Accounts. All accounts will be kept on the books of the Sewer Utility by the house and street number and under the account number assigned and the name of the owner or of the person signing the application for service. All bills and notices sent out by the Sewer Utility will be sent to the house or street number of the property. If non-resident owners or agents desire personal notice sent to a different address, they must file an application therefor with the Sewer Utility. Any error in address must be promptly reported to the Sewer Utility.

SECTION 1010 SANITARY SEWER ASSESSMENT POLICY - REPEALED

SECTION 1015 INDUSTRIAL USER STRENGTH CHARGE

1015.01 Recitals. The Metropolitan Waste Control Commission, a metropolitan commission organized and existing under the laws of the State (the Commission), in order to receive and retain grants in compliance with the Federal Water Pollution Control Act Amendments of 1972 and regulations thereunder (the "Act"), has determined to impose an industrial user sewer strength charge upon users of the Metropolitan Disposal System (as defined in Minnesota Statutes, Section 473.121, subdivision 24) to recover operation and maintenance costs of treatment works attributable to the strength of the discharge of industrial waste. This sewer strength charge is in addition to the charge based upon the volume of discharge. In order for the City to pay such costs based upon strength of industrial discharge and allocated to it each year by the commission, it is hereby determined to be necessary to establish sewer strength charges and a formula for the computation thereof for all industrial users receiving waste treatment services within or served by the City. Furthermore, Minnesota Statutes, Section 444.075, Subdivision 3, empowers the City to make such sewer charge a charge against the owner, lessee, occupant or all of them and certify unpaid charges to the county auditor as a tax lien against the property served.

1015.02 Establishment of Strength Charges. For the purpose of paying the costs allocated to the City each year by the Commission that are based upon the strength of discharge of all industrial users receiving waste treatment services within or served by the City, there is hereby established, in addition to the sewer charge based upon the volume, a sewer charge upon each person, company or corporation receiving waste treatment services within or served by the City, based upon strength of industrial waste discharged into the sewer system of the City (the "Strength Charge").

1015.03 Establishment of Strength Charge Formula. For the purpose of computation of the Strength Charge established by 1015.02, there is hereby established in compliance with the Act

the same strength charge formula designated in Resolution No. 76-172 adopted by the governing body of the Commission on June 15, 1976. This formula is based upon pollution qualities and difficulty of disposal of the sewage produced through an evaluation of pollution qualities and quantities in excess of an annual average base and the proportionate costs of operation and maintenance of waste treatment services provided by the Commission.

1015.04 Strength Charge Payment. The Strength Charge established by Section 1015.02 of this Code will be paid by each industrial user receiving waste treatment services and subject thereto before the 20th day after the date of billing thereof by the City. The payment will be deemed to be delinquent if not paid before such date. If the payment is not paid before such date an industrial user must pay interest compounded monthly at the rate of 2/3% per month on the unpaid balance due.

1015.05 Establishment of Tax Lien. As provided by Minnesota Statutes, Section 444.075, Subdivision 3, if the payment of the Strength Charge established by Section 1015.02 of this Code is not paid before the 60th day after the date of billing to the industrial user, the delinquent sewer strength charge, plus accrued interest established pursuant to 1015.04 will be deemed to be a charge against the owner, lessee and occupant of the property served, and the City will certify the unpaid delinquent balance to the County Auditor for collection along with taxes against the property served. The certification will not preclude the City from recovery of such delinquent sewer strength charge and interest thereon under any other available remedy.

SECTION 1020 STORM WATER FACILITIES, CHARGES AND FUND

1020.01. Establishment of Storm Water Facilities Fund. Pursuant to Minn. Stat. § 444.075, the City establishes a storm water management and facilities fund and authorizes the imposition of just and equitable charges for the use and availability of storm sewer facilities. For purposes of this Section 1020, all provisions of Minn. Stat. § 444.075 relating to storm water facilities are incorporated by reference and are made a part of this Section.

1020.02. Findings and Determinations.

Subd. 1. Authority/Purpose. In the exercise of its governmental authority and in order to promote the public health, safety, convenience and general welfare, the City will be preparing a storm water management plan and may be constructing, operating and maintaining a storm sewer system, including mains, holding areas and ponds, and other appurtenances and related facilities (the "facilities"). This Section is adopted in the further exercise of such authority in the future, for the same purposes, and for purposes of financing in part the cost of the storm water management plan and the costs of constructing, reconstructing, repairing, operating, maintaining, enlarging and improving the facilities or any portion of them (the "facilities costs").

Subd. 2. Imposition of Charges. Existing facilities have heretofore been financed and paid for through the imposition of special assessments and ad valorem taxes. It is now necessary and desirable to provide an alternative method of recovering some or all of the future facilities and storm water management plan costs through the imposition of charges as provided in this Section.

Subd. 3. Facilities Charges. In imposing charges for the facilities and storm water management plan ("facilities charges"), it is necessary to establish a procedure designed to make the charges just and equitable. Taking into account the status of the facilities, past methods of recovering facilities costs, and other relevant factors, it is determined that it would be just and equitable to assign costs on the basis of a charge of \$0.50 per month to each property in the City which is billed by the City for sanitary sewer charges.

Subd. 4. Council Establishment of Method. The Council finds that assigning costs and making charges cannot be done with mathematical precision but can only be accomplished within reasonable and practical limits. The provisions of this Section undertake to establish a reasonable and practical method for imposing such charges.

1020.03 Exemptions. The following land uses are exempt from facilities charges: (a) City, County and State road and highway rights-of-way, (b) lakes and ponds, and (c) City-owned property.

1020.04. Separate Fund. All facilities charges, when collected, and all moneys received from the sale of any facilities or equipment or any by-products, will be placed in a separate fund, and used first to pay the normal, reasonable and current costs of the storm water management study, operating and maintaining the facilities. The net revenues received in excess of the costs may be pledged by resolutions of the Council, or may be used though not so pledged, for the payment of principal and interest on obligations issued as provided in subdivision 2, of Minn. Stat. § 444.075, or to pay the portion of the principal and interest as may be directed in the resolutions.

1020.05. Establishment of a Tax Lien. Any facilities charges in excess of 90 days past due on October 1 of any year may be certified to the County Auditor for collection with real estate taxes in the following year pursuant to Minn. Stat. § 444.075, Subd. 3. In addition, the City may bring a civil action or exercise other legal remedies to collect unpaid facilities charges.

SECTION 1025 ENTITLED ILLICIT DISCHARGE DETECTION AND ELIMINATION

1025.01 Purpose and Objectives

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of the City of Deephaven through the regulation of non-stormwater discharges to the storm drainage system to the maximum extent practicable as required by state and federal law. This ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) MS4 permit process. The objectives of this ordinance are:

- A. To regulate the contribution of pollutants to the municipal separate storm sewer system by stormwater discharges by any user
- B. To prohibit Illicit Connections and Discharges to the municipal separate storm sewer system
- C. To establish legal authority to carry out all inspection, surveillance, and monitoring procedures necessary to ensure compliance with this ordinance

1025.02 Definitions

For the purposes of this ordinance, the following terms shall have the following meanings:

Authorized Enforcement Agency: Employees or designees of the City of Deephaven or the Minnesota Pollution Control Agency as designated to enforce this ordinance.

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 into 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.

City: The City of Deephaven

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 1 acre or more and projects that disturb less than 1 acre if they are part of a larger common plan of development. 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-stormwater discharge to the storm drain system, except as exempted in Section 1025.07 of this ordinance.

Illicit Connections: An illicit connection is defined as either of the following: 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-stormwater 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.

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

MPCA: Minnesota Pollution Control Agency.

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit: A permit issued by EPA (or by the State of Minnesota under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to Waters of the State, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-Stormwater 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 acting 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 liquids, solid wastes, and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, and accumulations, so that same may cause or contribute to pollution;

floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; 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 boulevards.

Storm Drainage System: Publicly-owned facilities by which stormwater 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, infiltration, 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 (SWPPP): 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 stormwater, discharged from a facility or property.

Waters of the State: 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 of Minnesota or any portion thereof.

1025.03 Applicability

This ordinance shall apply to all water entering the storm drain system generated on any developed or undeveloped lands unless explicitly exempted by an authorized enforcement agency.

1025.04 Responsibility for Administration

The City of Deephaven shall administer, implement, and enforce the provisions of this ordinance. Any powers granted or duties imposed upon the MPCA may be delegated in writing by the City Engineer of Deephaven to persons or entities acting in the beneficial interest of or in the employ of the City.

1025.05 Severability

The provisions of this ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Ordinance.

1025.06 Ultimate Responsibility

The standards set forth herein and promulgated pursuant to this Ordinance are minimum standards; therefore this Ordinance does not intend nor imply that compliance by any person will ensure that there will be no contamination, pollution, nor unauthorized discharge of pollutants.

1025.07 Discharge Prohibitions

Subd. 1 Prohibition of Illegal Discharges. No person shall discharge or cause to be discharged into the municipal storm drain system or Waters of the State any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than stormwater. The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

- (a) The following discharges are exempt from discharge prohibitions established by this ordinance: water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising groundwater, groundwater infiltration to storm drains, uncontaminated pumped groundwater, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, swimming pools (if de-chlorinated - typically less than one PPM chlorine), fire fighting activities, and any other water source not containing Pollutants.
- (b) Discharges specified in writing by the MPCA as being necessary to protect public health and safety.
- (c) Dye testing is an allowable discharge, but requires a verbal notification to the City Engineer 48-hours prior to the start of the test.
- (d) 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 MPCA or 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 provided that written approval has been granted for any discharge to the storm drain system.

Subd. 2 Prohibition of Illicit Connections

- (a) The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.
- (b) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
- (c) A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

Subd. 3 Sump Pump and Drain Tile Discharges

- (a) The construction, use, maintenance or continued existence of piping of private sump pump and/or drain tile discharges to a surface outlet located within 20 feet of public streets or sidewalks is prohibited.
- (b) Connection of private sump pump and/or drain tile lines to public storm sewers is prohibited unless a Right of Way permit is obtained from the City Engineer.

1025.08 Suspension of MS4 Access

Subd. 1 Suspension due to Illicit Discharges in Emergency Situations. The City of Deephaven may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the State. If the violator fails to comply with a suspension order issued in an emergency, the City may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the State, or to minimize danger to persons.

Subd. 2 Suspension due to the Detection of Illicit Discharge. Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The City will notify a violator of the proposed termination of its MS4 access.

Subd.3A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this Section, without the prior approval of the City.

1025.09 Industrial or Construction Activity Discharges

Any person subject to an Industrial or Construction Activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to City prior to the allowing of discharges to the MS4.

1025.10 Monitoring of Discharges

Subd. 1 Applicability. This section applies to all facilities that have stormwater discharges associated with industrial activity, including construction activity.

Subd. 2 Access to Facilities.

(a) 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. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to representatives of the authorized enforcement agency.

(b) Facility operators 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 the NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law.

- (c) The City shall have the right to set up on any permitted facility such devices as are necessary in the opinion of the City to conduct monitoring and/or sampling of the facility's stormwater discharge.
- (d) The City has the right to require the discharger to install monitoring equipment as necessary. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy per manufacturer's recommendations.
- (e) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly removed by the operator at the written or oral request of the City and shall not be replaced. The costs of clearing such access shall be borne by the operator.
- (f) Unreasonable delays in allowing the City access to a permitted facility is a violation of the stormwater discharge permit and of this Ordinance. A person who is the operator of a facility with a NPDES permit to discharge stormwater associated with industrial activity commits an offense if the person denies the City reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this Ordinance.
- (g) If the City has been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this Ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this Ordinance 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 a search warrant from any court of competent jurisdiction.

1025.11 Requirement to Prevent, Control, and Reduce Stormwater Pollutants by the Use of Best Management Practices

The City of Deephaven has adopted requirements identifying Best Management Practices for any activity, operation, or facility which may cause or contribute to pollution or contamination of stormwater, the storm drain system, or Waters of the State. The owner or operator of a commercial or industrial establishment shall provide, at their own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the municipal storm drain system or Waters of the State through the use of these structural and non-structural BMPs. Further, any person responsible for a property or premise, which is, or may be, the source of an illicit discharge, may be required to implement, at said person's expense, additional structural and non-structural BMPs to prevent the further discharge of pollutants to the municipal separate storm sewer system. Compliance with all terms and conditions of a valid NPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliant with the provisions of this section. These BMPs shall be part of a stormwater pollution prevention plan (SWPPP) as necessary for compliance with requirements of the NPDES permit.

1025.12 Watercourse Protection

Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property 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 lessee 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.

1025.13 Notification of Spills

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 a release. In the event of such a release of hazardous materials said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the City in person or by phone or facsimile 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 of Deephaven within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or 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 shall be retained for at least three years.

1025.14 Enforcement

Whenever the City of Deephaven finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, the City may order compliance by written Notice of Violation to the responsible person. Such notice may require without limitation:

- (a) The performance of monitoring, analyses, and reporting;
- (b) The elimination of illicit connections or discharges;
- (c) The violating discharges, practices, or operations shall cease and desist;
- (d) The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property; and
- (e) Payment of a fine to cover administrative and remediation costs; and
- (f) The implementation of source control or treatment BMPs; and
- (g) The deadline within which to remedy the violation.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

1025.15 Appeal of Notice of Violation

Any person receiving a Notice of Violation may appeal the determination of the City. The notice of appeal must be received by the City within 15 days from the date of the Notice of Violation. The appeal shall be heard by the City Council within 30 days from the date of receipt of the notice of appeal. The decision of the City Council shall be final.

1025.16 Enforcement Measures After Appeal

If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, within the deadline extended by the decision of the City

Council, then representatives of the City shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent, or person in possession of any premises to refuse to allow the City or designated contractor to enter upon the premises for the purposes set forth above.

1025.17 Cost of Abatement of the Violation

Within 30 days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs and the deadline to pay the abatement costs. The property owner may file a written protest objecting to the costs and payment terms of the abatement within 15 days. The appeal shall be heard by the City Council within 30 days from the date of receipt of the notice of appeal. If the amount due is not paid within a timely manner as determined by the decision of the City Council after hearing the appeal, the charges be filed with Hennepin County and shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment.

1025.18 Injunctive Relief

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Ordinance. If a person has violated or continues to violate the provisions of this ordinance, the authorized enforcement agency may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

1025.19 Compensatory Action

In lieu of enforcement proceedings, penalties, and remedies authorized by this Ordinance, the authorized enforcement agency may impose upon a violator alternative compensatory action, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

1025.20 Violations Deemed a Public Nuisance

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

1025.21 Criminal Prosecution

Any person that violates this ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof, may be subject to the maximum fine and imprisonment allowed by State law. Each such violation shall constitute a separate offense punishable to the maximum extent of the law. The authorized enforcement agency may recover all attorneys' fees court costs and other expenses associated with enforcement of this ordinance, including sampling and monitoring expenses.

1025.22 Remedies Not Exclusive

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

4. MCM 6 – Pollution Prevention / Good Housekeeping for Municipal Operations

CITY OF DEEPHAVEN

Municipal Operations Best Management Practices



2015

**MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES
CITY OF DEEPHAVEN**

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CITY OF DEEPHAVEN

Section 1: Waste Disposal and Storage

Improper storage and handling of waste materials can allow a number of pollutants including oils and greases, toxic and chemical compounds (including nutrients), bacteria, metals, and other wastes to enter waterways through stormwater runoff and non-stormwater discharges. Proper handling, along with recycling and waste reduction will reduce the potential for polluting waterways, groundwater, and recharge points.

- 1.1. Ensure that all waste areas and dumpsters are covered and not leaking.
- 1.2. Place waste receptacles indoors or under a roof overhang whenever possible.
- 1.3. Keep all container lids closed at all times unless adding or removing material.
- 1.4. Liquid wastes should be kept out of the dumpster and the lid kept closed to keep storm water out.
- 1.5. Waste oil, antifreeze, spent solvents, and other liquids from vehicle maintenance activities should be recycled.
- 1.6. Spent batteries should be disposed of as hazardous waste or returned for reclamation and reuse.
- 1.7. Arrange for waste to be picked up regularly and disposed of at approved disposal facilities. If the amount of generated waste exceeds the capacity of waste containers, obtain more containers or increase frequency of pickups.
- 1.8. Protect or block storm drain inlets, open manholes, and roadside ditches during utility activities with rock socks, wattles or covers. Always check that these BMP's are in place before starting work on a construction site.
- 1.9. Arrange for waste to be picked up regularly and disposed of at approved disposal facilities. If the amount of generated waste exceeds the capacity of waste containers, obtain more containers or increase frequency of pickups.
- 1.10. Do not wash out waste containers or dumpsters outdoors. Return dumpsters to the owners for cleaning at the owner's facility. If municipally owned containers must be washed, do so at a sink or floor drain so that wastewater goes to the sanitary sewer.
- 1.11. Only wash concrete mixing and pouring equipment in designated concrete washout areas at each job site. Never wash into a storm drain inlet.

Section 2: Management of Stockpiles

Stockpile Management procedures and practices are designed to reduce or eliminate air and stormwater pollution from stockpiles of soil, paving materials such as portland cement concrete rubble, reclaimed asphalt pavement (RAP), hot mixed-cold laid bituminous mixes, limestone rock asphalt, pre-coated aggregates, and various patching mixes.

- 2.1. Locates stockpiles away from concentrated flows of stormwater, drainage courses, and inlets.
- 2.2. Protects all stockpiles from stormwater run-on using temporary perimeter sediment barriers such as berms, dikes, fiber rolls, silt fences, sandbag, gravel bags, or straw bale barriers.
- 2.3. Manages stockpiles of contaminated soil as follows:
 - 2.3.1. Cover stockpiles with plastic sheeting or tarps.
 - 2.3.2. Install berms around stockpiles to prevent runoff from leaving the area.

MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES

CITY OF DEEPHAVEN

- 2.3.3. Locate as far from storm drains or watercourses as possible.
- 2.4. Place bagged materials on pallets and under cover.
- 2.5. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- 2.6. Repair and/or replace perimeter controls and covers as needed to keep them functioning properly.

Section 3: Vehicle Fueling, Washing and Maintenance

Activities associated with fueling and cleaning of municipal vehicles and equipment can easily contribute pollutants to stormwater discharges or directly discharge to the municipal separate storm sewer (MS4). Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oils, grease, metals, and other toxic chemicals to stormwater run-off or discharge directly into storm sewers or receiving waters. Pollutants from washing and maintaining vehicles can vary from engine oil to chemicals within detergents such as phosphates. Properly designed and constructed fueling and wash areas will reduce the potential for contaminated discharges.

- 3.1. General Washing Practices
 - 3.1.1. Keep equipment clean; do not allow a buildup of oil/grease.
 - 3.1.2. A commercial vehicle wash is the ideal location for washing vehicles. Commercial vehicle washes have the ability to recycle their water on-site as well as to contain wash water so it will not enter the storm drain.
 - 3.1.3. If no commercial vehicle washes are available, then vehicles should be washed indoors (that will drain to sanitary sewers) or on grass/pervious surfaces.
 - 3.1.4. Place spill clean-up materials in readily available locations by the wash area (clearly mark location of spill clean-up materials).
 - 3.1.5. Clean up spills or any wash water that may improperly discharge.
 - 3.1.6. Use phosphate-free detergents.
 - 3.1.7. Do not store solvents or degreasers in the wash area.
- 3.2. General Fueling Practices
 - 3.2.1. Place drip pans or absorbent pads under direct fueling location if fueling will occur over a permeable surface.
 - 3.2.2. Do not "top off" fuel tanks.
 - 3.2.3. Do not place used spill response materials in adjacent trash receptacles. Dispose in a proper manner.
 - 3.2.4. Do not leave active fueling operations unattended.
- 3.3. General Maintenance Practices
 - 3.3.1. Keep all wash areas neat and orderly.
 - 3.3.2. Perform monthly inspections and clean and maintain any sumps or oil/water separators installed at the wash area.
 - 3.3.3. Inspect and maintain washing equipment, especially the hoses, wands and nozzles. Make sure they deliver the proper rate of water and shut-off automatically when not in use.

MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES

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- 3.3.4. For wash areas that are plumbed to a sanitary sewer, clean the sewer inlet at least weekly.
- 3.3.5. Inspect all fueling equipment and fuel islands at least daily for leaks, drips, corrosion, wear or damage. Repair or replace all faulty equipment promptly.

Section 4: Routine Street and Parking Lot Sweeping

Regular street and parking lot sweeping removes sediment and organic material that would otherwise be washed into stormwater ponds or surface waters. Sweeping should be performed at least twice a year on all roads and preferably more in high priority areas (adjacent to high value surface waters, high percentage of tree canopy, and areas with minimal structural stormwater BMPs).

- 4.1. Operate all sweepers according to the manufacturer's recommended procedures.
- 4.2. Develop a street sweeping schedule including prioritized roads, secondary roads and frequency of sweeping.
- 4.3. Make sure brushes and water spray hoses are functional before starting sweeping operations.
- 4.4. Clean out solid debris and store in an impervious area or in a temporary disposal area such as a truck or dumpster.
- 4.5. Scrape out left over debris from the hopper after the last dump of the day. Dispose of waste in trash or dumpster temporary storage area.
- 4.6. Always wash sweepers in a wash area or wash bay that drains to a sanitary sewer.
- 4.7. Avoid conducting sweeping operations during rain events.
- 4.8. High priority areas shall be swept more often and shall include the following:
 - 4.8.1. Areas where storm inlets frequently clog due to organic material (leaves, grass clippings, etc.). Sweep as needed to keep inlets free draining.
 - 4.8.2. Neighborhoods with a high percentage of tree canopy. Sweep in spring, in summer after bloom, and autumn after leaves fall.
 - 4.8.3. Drainage areas with minimal structural stormwater management measures. Sweep in spring, in summer after bloom, and autumn after leaves fall.
 - 4.8.4. Areas used for special events (street fairs, art shows, parades, etc.). Sweep immediately after event.
 - 4.8.5. Street construction projects. Sweep at the end of every day.
 - 4.8.6. Right-of-way areas. Sweep immediately after grass cutting operations.

Section 5: Emergency Response

In the event of a spill or leak that threatens property or life, call **911** and contact the Minnesota Department of Public Safety Duty Officer at 1-800-422-0798 (toll free) or 651-649-5451 (Metro area), if the source is a spill or leak as defined in Minnesota Statute § 115.061.

Spilled chemicals shall be effectively and quickly contained and cleaned up. City personnel shall clean up spills themselves **only if properly trained and protected**. Employees who are not trained in spill cleanup procedures shall report the spill, warn other employees, and

MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES

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maintain a safe distance. The **Response Procedures** outlined in the **Illicit Discharge Detection and Elimination Program** shall be followed.

Section 6: Cleaning of Maintenance Equipment, Building Exteriors and Dumpsters

Municipal vehicle washing can generate dry weather runoff contaminated with detergents, oils, grease, and heavy metals. Equipment and building washing BMPs can eliminate contaminated wash water discharges to the storm sewer system.

- 6.1. Proper equipment maintenance includes:
 - 6.1.1. Maintain equipment regularly. Check for leaks and fix immediately.
 - 6.1.2. Capture leaks during maintenance activities with a container.
 - 6.1.3. Cover equipment stored outside with tarps.
- 6.2. Proper infrastructure cleaning includes:
 - 6.2.1. Perform cleaning activities during dry weather periods.
 - 6.2.2. Use non-toxic chemicals and/or non-phosphate detergents.
 - 6.2.3. Minimize use of solvents.
- 6.3. Building Repair, Remodeling, and Construction:
 - 6.3.1. Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
 - 6.3.2. Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work and properly dispose of collected material daily.
- 6.4. Proper dumpster cleaning includes:
 - 6.4.1. Do not drain wash water into storm drainage system.
 - 6.4.2. Wash dumpsters in area that drains to sanitary system or contact waste management company that owns dumpster for cleaning at the company's facility.
 - 6.4.3. Properly dispose of all materials used to clean dumpsters.

Section 7: Use, Storage and Disposal of Significant Materials

The storage, use and disposal of hazardous materials and chemicals require consideration of a number of environmental health and safety factors. These include inventory control, as well as the proper use and disposal of containers and equipment.

- 7.1. BMPs for chemicals and hazardous materials:
 - 7.1.1. Keep lids on all containers and store under cover.
 - 7.1.2. Properly close all containers when not in use.
 - 7.1.3. Use secondary containment for hazardous materials and protect from rain. Store hazardous materials in an area where spills will not reach storm drains.
 - 7.1.4. Label all hazardous materials according to hazardous waste regulations.
 - 7.1.5. Label purchase date on container.
 - 7.1.6. Maintain storage area at proper temperature and humidity.
- 7.2. BMPs for flammable materials:
 - 7.2.1. Store flammable materials in ventilated storage cabinets or approved safety cans. Lids of safety containers shall be kept closed, as well as doors of storage cabinets.
 - 7.2.2. Maintain an adequate spill kit near all storage areas where spills are possible.
 - 7.2.3. Isolate flammable and combustible materials from ignition sources.

MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES

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- 7.2.4. Maintain proper fire suppression equipment in areas containing flammable materials...
- 7.3. BMPs for significant materials:
 - 7.3.1. Do not combine significant materials with other materials during storage. Combining materials can create a safety hazard and reduce options for disposal.
 - 7.3.2. Do not combine significant material waste with other materials (e.g. used oil with used fuel). Combining materials can create a safety hazard and reduce options for disposal.
 - 7.3.3. Use secondary containment measures for bulk fluids stored in amounts greater than 55 gallons.
 - 7.3.4. Keep storage areas clean and dry. Conduct regular inspections to detect leaks and spills.
 - 7.3.5. Store batteries indoors and secure to avoid breakage or acid spills. Recycle batteries when spent.
 - 7.3.6. Elevate treated wood products stored outdoors from ground with pallets and cover with tarps.

Section 8: Landscaping, Park and Lawn Maintenance

Conventional vegetation management practices significantly impact stormwater runoff. Frequent watering, over-fertilizing, improper disposal of vegetation clippings, and the use of pesticides/herbicides increase conveyance of nutrients and chemicals to surface waters. Incorporation of vegetation management BMPs can greatly reduce pollutant loads from City green spaces.

- 8.1. BMPs for vegetation management
 - 8.1.1. Perform mowing during optimal conditions (i.e. dry weather, minimal wind).
 - 8.1.2. Mulch grass during mowing when possible.
 - 8.1.3. Dispose organic material at compost facility when possible. If a compost facility is not available, dispose organic material at approved waste management facility. Do not dispose organic materials by washing into storm drainage system or dumping in ditches.
 - 8.1.4. Install perimeter erosion control measures when performing landscape maintenance or repairs adjacent to surface waters.
 - 8.1.5. Use mulch or erosion control blanket to cover exposed soils and flower beds.
 - 8.1.6. Do not direct grass clippings from mowing on to impervious surfaces. Remove organic material deposited on impervious surfaces immediately after mowing operations are completed.
 - 8.1.7. Irrigate areas at rate appropriate for vegetation and soils. Do not irrigate at rate that exceeds soil infiltration rate.

Section 9: Road Maintenance

Maintenance activities for roads and bridges generate stormwater pollutants, including sediment, heavy metals, solvents, oils, and fuel. The use of BMPs during these maintenance activities help reduce pollutant loads to surface waters.

MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES

CITY OF DEEPHAVEN

- 9.1. BMPs for road and bridge maintenance:
 - 9.1.1. Install perimeter erosion control measures in critical areas prior to start of maintenance activities. Install siltfence/silt curtain in areas adjacent to surface waters, inlet protection on storm drains immediately down gradient, and rock entrances for areas that can be isolated from traffic.
 - 9.1.2. Sweep or vacuum dry waste material immediately after maintenance activity is completed (e.g. saw-cutting pavement, removing pavement striping, etc.).
 - 9.1.3. Do not apply pavement striping during windy, wet, or rainy conditions.
 - 9.1.4. When not in use, turn wet saw equipment off and place drip pans under or watertight barriers around equipment to contain leaks.
 - 9.1.5. Wash out mixers, delivery vehicles, or other equipment in designated washout areas only.

Section 10: Right-of-Way Maintenance

Public right-of-way must be maintained to adequately convey traffic. Periodic maintenance of streets, utilities, and vegetation is required to provide acceptable driving surfaces, adequate storm drainage capacity, and appropriate sight lines.

- 10.1. BMPs for right-of-way maintenance:
 - 10.1.1. Install perimeter erosion control measures in critical areas prior to start of maintenance activities. Install siltfence/silt curtain in areas adjacent to surface waters, inlet protection on storm drains immediately down gradient, and rock entrances for areas that can be isolated from traffic.
 - 10.1.2. Perform mowing during optimal conditions (i.e. dry weather, minimal wind).
 - 10.1.3. Dispose organic material at compost facility when possible. If a compost facility is not available, dispose organic material at approved waste management facility. Do not dispose organic materials by washing into storm drainage system or dumping in ditches.
 - 10.1.4. Dispose non-organic debris at approved waste management facility.
 - 10.1.5. Remove any obstructions blocking runoff from entering the storm drainage system.
 - 10.1.6. Repair/stabilize any channel erosion immediately upon discovery.

Section 11: Application of Herbicides, Pesticides and Fertilizers

Fertilizers, herbicides, and pesticides possess a relatively high potential for contributing pollutants to surface waters, both while being stored and during application. Proper management of materials and effective training will reduce the pollutant load discharged.

- 11.1. BMPs for use of herbicides, Pesticides and fertilizers:
 - 11.1.1. City personnel responsible for storage and application of Restricted Use Pesticides shall obtain the Certified Applicator credential per the Federal Insecticide, Fungicide and Rodenticide Act.
 - 11.1.2. City personnel that come in contact with any herbicide, pesticide, or fertilizer shall review the material safety data sheets (MSDS) and follow the procedures for storage and use defined therein.
 - 11.1.3. Apply herbicides, pesticides, and fertilizers during dry weather conditions.

MUNICIPAL OPERATIONS BEST MANAGEMENT PRACTICES

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- 11.1.4. Do not apply herbicides, pesticides, and fertilizers during windy conditions.
- 11.1.5. Employ application techniques that increase efficiency. Calibrate equipment, follow label instructions, and use the lowest effective application rates.
- 11.1.6. Apply fertilizers during growing season only. Minimize or eliminate the use of non-phosphate fertilizers.
- 11.1.7. Use only pesticides and herbicides that are quickly absorbed by soil and vegetation.
- 11.1.8. Mix and load materials in contained area in case of spill or leak.
- 11.1.9. Never submerge a water supply hose in a chemical container.

Section 12: Cold Weather Operations

Road salt and deicers are necessary for traffic and pedestrian safety. However, their application directly on impervious surface allows for chlorides and other toxic chemicals to dissolve in runoff and enter the storm drainage system. Since chlorides are extremely difficult to remove from water, they must be judiciously applied.

- 12.1. Use trucks equipped with salt spreading calibration devices.
- 12.2. Regulate the application of deicing salt at the lowest effective rate.
- 12.3. Use alternative deicing materials (sand or salt substitutes) or minimize amount of salt in sensitive areas (areas with no structural BMPs, adjacent to surface waters, etc.).
- 12.4. Consider temperature when determining application rate. If temperatures above freezing are expected, minimize use of salt.
- 12.5. Maintain and wash trucks used for deicing in contained area that drains to sanitary sewer system.
- 12.6. Do not dump or plow snow into drainage ditches or on to frozen water bodies.

References

California Stormwater Quality Association BMP Handbook @ <http://www.caasqa.org/bmp-handbooks/municipal-bmp-handbook>

EPA Pollution Prevention/Good Housekeeping for Municipal Operators @ <http://water.epa.gov/polwaste/npdes/swbmp/Pollution-Prevention-Good-Housekeeping-for-Municipal-Operators.cfm>

LIMC Good Housekeeping Guidance and BMP Manual @ http://www.lancasterintermunicipalcommittee.org/programs_stormwater.php

Partners For A Clean Environment @ <http://www.pacepartners.com/stormwater/municipal-operations/72-municipal-stormwater-program-tools#SOP>

MUNICIPAL FACILITY INVENTORY
City of Deephaven, MN

		Municipal Operations Best Management Practices											
		1	2	3	4	5	6	7	8	9	10	11	12
FACILITY ID	Facility Name / Land Use	Proper Waste Management, Storage & Disposal	Proper Stockpile Management	Proper Vehicle Fueling, Washing, & Maintenance	Routine Pavement Sweeping	Proper Emergency Response Procedures	Proper Cleaning of Maintenance Equipment, Buildings, & Dumpsters	Proper Use, Storage, and Disposal of Significant Materials	Proper Lawn and Landscape Maintenance	Proper Road Maintenance	Proper Right-of-Way Maintenance	Proper Application of Herbicides, Pesticides, and Fertilizers	Proper Snow Removal and Deicing Operations
1	Cleveland Park	X							X			X	
2	Pump Park	X							X			X	
3	City Parking Lot		X		X					X			X
4	City Open Space								X			X	
5	City Open Space								X			X	
6	City Open Space								X			X	
7	Deephaven Beach	X			X		X		X	X		X	X
8	City ROW Easement										X		
9	City Open Space								X			X	
10	City Open Space								X			X	
11	City Open Space								X			X	
12	City Open Space								X			X	
13	Thorpe Park	X			X		X		X	X		X	X
14	City Open Space								X			X	
15	City Open Space								X			X	
16	Hineline Property								X			X	
17	City Open Space								X			X	
18	Shuck Park	X			X		X		X	X		X	X
19	City Open Space								X			X	
20	Village Hall Park	X			X		X		X	X		X	X
21	City Open Space								X			X	
22	Carson's Bay Landing	X			X		X		X	X		X	X
23	Burton Park								X			X	
24	Sandy Beach	X					X		X			X	
25	Rocky Beach	X					X		X			X	
26	Cottagewood Childrens Park	X					X		X			X	X
27	Nocomo Beach	X					X		X			X	
28	Robinson's Bay Beach	X					X		X			X	

CITY OF DEEPHAVEN

Employee Training Program



2015

**EMPLOYEE TRAINING PROGRAM
CITY OF DEEPHAVEN**

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EMPLOYEE TRAINING PROGRAM

CITY OF DEEPHAVEN

Introduction

As required by the General Permit to Discharge Stormwater associated with small Municipal Separate Storm Sewer Systems, the City's Storm Water Pollution Prevention Plan (SWPPP) must include an Employee Training Program commensurate with each employee's job duties as they relate to the SWPPP, including reporting and assessment activities. Training materials from various sources will be utilized, including from the United States Environmental Protection Agency (USEPA), State and Federal agencies, and other organizations as appropriate and will address the importance of protecting water quality.

Section 1: Initial Training

Initial training must be provided to all employees upon implementation of the new SWPPP and proposed Employee Training Program, new employees hired after implementation of the new SWPPP, and all employees if significant changes are made to the SWPPP in the future.

1.1. Public Works Staff

1.1.1. Illicit Discharge Detection and Elimination

- Review the IDDE Program
- Review inspection procedures and forms
- Hazardous Materials Training (optional)
- Additional training as directed by MS4 Manager

1.1.2. Best Management Practices

- Review the Municipal Operation BMPs section of the SWPPP
- Review the Municipal Facility Inventory
- Review the Pond, Wetland, and Lake Inventory
- Review the Storm Sewer Map
- Review Pond Assessment Procedures and Schedule
- Review all Operator Manuals for any equipment to be used
- Review all Material Safety Data Sheets for any significant materials to be used
- Additional training as directed by the MS4 Manager

1.1.3. Inspections and Enforcement

- Review inspection forms for Construction Stormwater, Stormwater Ponds, and Structural BMPs
- Review Enforcement Response Procedures

1.2. Non-Public Works Staff

1.2.1. Illicit Discharge Detection and Elimination

- Review the IDDE Program

1.2.2. Best Management Practices

- Review the Municipal Operation BMPs section of the SWPPP
- Review the Municipal Facility Inventory
- Review the Pond, Wetland, and Lake Inventory
- Review the Storm Sewer Map
- Additional training as directed by the MS4 Manager

1.2.3. Inspections and Enforcement

EMPLOYEE TRAINING PROGRAM

CITY OF DEEPHAVEN

- Review inspection forms for Construction Stormwater, Stormwater Ponds, and Structural BMPs
- Review Enforcement Response Procedures

Section 2: Recurring Training

Annual training will be provided to all employees commensurate with their job duties as they relate to stormwater management.

2.1. Public Works Staff

2.1.1. Illicit Discharge Detection and Elimination

- Review the IDDE Program
- Review inspection procedures and forms
- Hazardous Materials Training (optional)
- Additional training as directed by MS4 Manager

2.1.2. Best Management Practices

- Review the Municipal Operation BMPs section of the SWPPP
- Review Municipal Facility Inventory updates
- Review Storm Sewer Map updates
- Review all Operator Manuals for any equipment to be used
- Review all Material Safety Data Sheets for any significant materials to be used
- Additional training as directed by the MS4 Manager

2.2. Non-Public Works Staff

2.2.1. Illicit Discharge Detection and Elimination

- Review the IDDE Program

2.2.2. Best Management Practices

- Additional training as directed by the MS4 Manager

Section 3: Seasonal Employees

Seasonal employees will be provided with stormwater management training tailored to their required job duties.

3.1. Seasonal Staff

3.1.1. Illicit Discharge Detection and Elimination

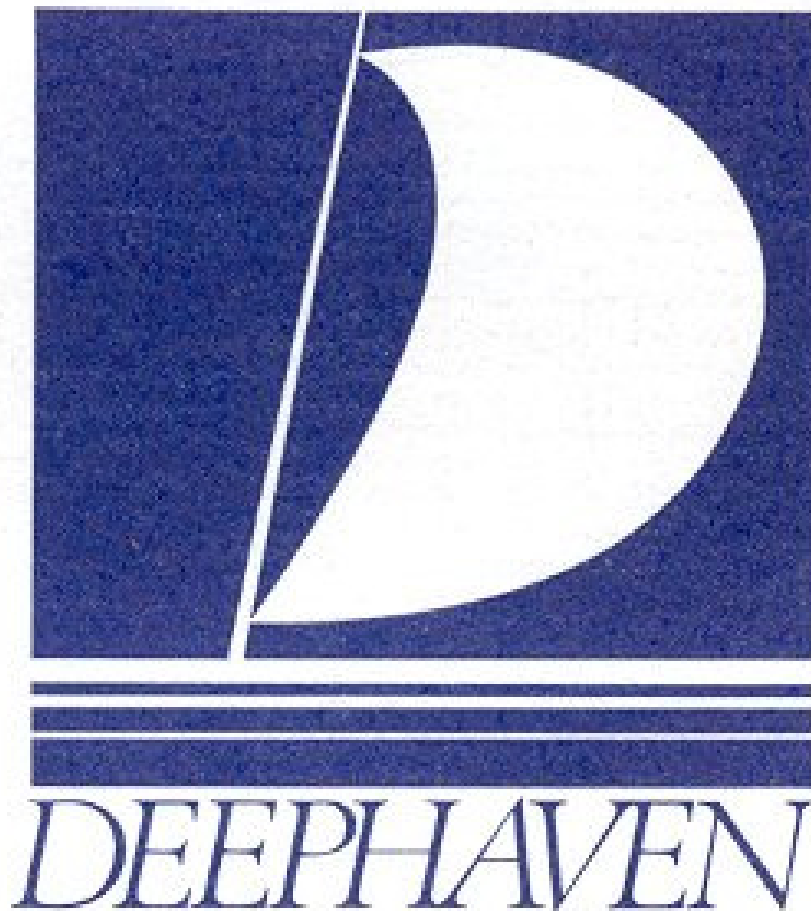
- Review the IDDE Program

3.1.2. Best Management Practices

- Review the Municipal Operation BMPs section of the SWPPP
- Review the Municipal Facility Inventory
- Review the Pond, Wetland, and Lake Inventory
- Review the Storm Sewer Map
- Review all Operator Manuals for any equipment to be used
- Review all Material Safety Data Sheets for any significant materials to be used
- Additional training as directed by the MS4 Manager

CITY OF DEEPHAVEN

Pond Assessment Program



2015

**POND ASSESSMENT PROGRAM
CITY OF DEEPHAVEN**

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POND ASSESSMENT PROGRAM

CITY OF DEEPHAVEN

Section 1: Assessment Procedures

1.1. Determine Existing Conditions

- 1.1.1. Delineate watersheds for every pond maintained by City.
 - Review Storm Sewer Map
 - Review LiDAR topographic mapping
 - Perform visual inspections
- 1.1.2. Define watershed characteristics (impervious surface percentage, time-of-concentrations, areas, soil types, etc.)
 - Review aerial mapping
 - Review Land Use Plan
 - Review Storm Sewer Map
 - Review LiDAR topographic mapping
 - Perform visual inspections
- 1.1.3. Define pond characteristics (design permanent volume, existing permanent volume, outlet, normal water level, etc.)
 - Review Construction Plans and Record Plans
 - Perform visual inspections
 - Perform site surveys
 - Perform bathymetric surveys
 - Perform sediment testing for pollutants

1.2. Assess TSS and TP Treatment Effectiveness

- 1.2.1. Create P8 models for every pond maintained by City
 - Input information gathered into models
 - Calculate TSS and TP removal efficiencies
- 1.2.2. Define TSS and TP treatment effectiveness required for every pond
 - Establish permanent volumes required to meet NURP standards (60% TSS removal, 62% PP removal, 34% TP removal)
 - Determine additional reductions required to meet TMDLs, if any
 - Determine additional reductions required to provide increased water quality benefits
- 1.2.3. Rate pond effectiveness / need for maintenance
 - MN Stormwater Manual recommends sediment removal after 50% of permanent pool capacity has been lost
 - Compare existing removal efficiencies to required efficiencies
 - Review proximity to surface waters
 - Review proximity to Impaired waters
 - Review TMDL requirements
 - Determine Management Level of Sediment
 - Rate pond based on following system:

**POND ASSESSMENT PROGRAM
CITY OF DEEPHAVEN**

Table 1: Pond Rating System

Rating	Description
1	- Pond completely ineffective - Pollutant removal efficiency reduced well below 50 % NURP / required standards (60% reduction or more) - Efficiency reduced below 50% NURP / required standards (50-60% reduction) and discharges directly to surface water or located in Impaired Water watershed - Maintenance required as soon as possible to prevent further pollutant discharge
2	- Pollutant removal efficiency reduced below 50% NURP / required standards (50-60% reduction) but does not discharge directly to surface water and is not located in Impaired Water watershed - Pollutant removal efficiency reduced to approximately 50% NURP / required standards and discharges directly to surface water or located in Impaired Water watershed - Maintenance should be provided as soon as funds are available
3	- Pollutant removal efficiency reduced to approximately 50% NURP / required standards - Does not discharge directly to surface water and not located in Impaired Water watershed - Maintenance should be planned for near future
4	- Pollutant removal efficiency reduction approaching 50% NURP / required standards (25-50% reduction) - Pond should be checked yearly to monitor permanent pool volume reduction and determine if change in rating is necessary
5	- Pond recently constructed or dredged, pollutant removal efficiency at maximum level (0-25% reduction) - Pond should be checked for permanent pool volume capacity starting 5 years after initial construction or dredging and every 5 years after until rating decrease is warranted

Section 2: Schedule

2.1. 2016

- Delineate watersheds
- Define watershed characteristics
- Define pond characteristics

2.2. 2017

- Create P8 models
- Define TSS and TP treatment effectiveness required
- Rate pond effectiveness / need for maintenance

5. Enforcement Response Procedures (ERPs)

CITY OF DEEPHAVEN

Enforcement Response Procedures (ERPs) for MS4 Permit Violations



2015

**ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS
CITY OF DEEPHAVEN**

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ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS

CITY OF DEEPHAVEN

Introduction

Under the terms of the General NPDES/SDS Permit MNR040000, the City of Deephaven is required to develop and implement enforcement authority for construction activities that take place within the boundaries of the Municipal Separate Storm Sewer System (MS4). The purpose of this Enforcement Response Plan (ERP) is to communicate how enforcement tools can be used to achieve compliance. The Enforcement Response Plan also specifies criteria by which City personnel can determine the enforcement action most appropriate to instances of non-compliance. This plan outlines the City procedures that can be followed when construction stormwater, illicit discharge or post-construction violations are discovered. This plan is a guide; any of the enforcement responses may be used at the City's discretion. The City may also choose to pursue an enforcement case by skipping intermediate steps.

Section 1: Types of Enforcement Responses

- 1.1. Verbal Warning
 - 1.1.1. Verbal warnings shall specify the nature of the violation, required corrective actions, the time frame for correction, and a follow-up inspection date.
 - 1.1.2. Verbal warnings may be given at the discretion of the inspector when it appears the condition is not causing undue harm to public health or the environment and can be corrected by the violator within a reasonable time.
 - 1.1.3. Notification of verbal warnings shall be forwarded to the applicable watershed district (Minnehaha Creek Watershed District - MCWD or Riley-Purgatory-Bluff Creek Watershed District - RPBCWD) for their records.
- 1.2. Notice of Violation (NOV)
 - 1.2.1. NOVs shall specify the nature of the violation, required corrective actions, the time frame for correction, and a follow-up inspection date.
 - 1.2.2. NOVs shall be given if the violator has not responded to verbal warnings within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.
 - 1.2.3. NOVs shall consist of written communication and can be delivered either by email or letter.
 - 1.2.4. NOVs shall require the violator to take immediate action to terminate unauthorized discharges.
 - 1.2.5. NOVs shall require the violator to submit a Response Plan for satisfactory correction of the violation and prevention of future violations, including a timeline for specific required actions that will be taken.
 - 1.2.6. Notification of NOVs shall be forwarded to the applicable watershed district (Minnehaha Creek Watershed District - MCWD or Riley-Purgatory-Bluff Creek Watershed District - RPBCWD) for their records.
- 1.3. Stop Work Order
 - 1.3.1. The City may issue a stop work order for any project that has violated or continues to violate City ordinance or any permit or order issued there under.
 - 1.3.2. Stop Work Orders shall specify the nature of the violation, required corrective actions, the time frame for correction, and a follow-up inspection date.
 - 1.3.3. Stop Work Orders shall be given if the violator has not responded to NOVs within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.

ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS CITY OF DEEPHAVEN

- 1.3.4. Stop Work Orders shall require the violator to take immediate action to terminate unauthorized discharges.
 - 1.3.5. If a Response Plan was not developed as part of the NOV process, Stop Work Orders shall require the violator to submit a Response Plan for satisfactory correction of the violation and prevention of future violations, including a timeline for specific required actions that will be taken.
 - 1.3.6. The only operations that may proceed while work is stopped shall be to address the violation listed in the Stop Work Order. No other operations may proceed until the corrective measures have been approved by the City.
 - 1.3.7. If the unauthorized discharge is not terminated and appropriate control measures installed within a reasonable time, the City may perform corrective actions as deemed necessary. The violator shall be responsible for any expenses incurred by the City to perform corrective actions, and the City must be reimbursed for such expenses prior to any other work proceeding.
 - 1.3.8. Citations may also be pursued with the Stop Work Order, at the discretion of the City, and any fines must be paid in full prior to any other work proceeding.
 - 1.3.9. Notification of Stop Work Orders shall be forwarded to the applicable watershed district (Minnehaha Creek Watershed District - MCWD or Riley-Purgatory-Bluff Creek Watershed District - RPBCWD) for their records.
- 1.4. Citations
 - 1.4.1. The City may coordinate with local law enforcement to have citations issued for any project that has violated or continues to violate City ordinance or laws of the State (i.e. littering, illegal dumping, public nuisance, etc.).
 - 1.4.2. Citations shall only be pursued if the violator has not responded to a Stop Work Order and required corrective actions within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.
 - 1.4.3. If a Stop Work Order was not issued previously but the extents of the violation warrant a Citation, a Stop Work Order shall be issued in conjunction with pursuit of a Citation, and the process for the Stop Work Order shall be followed.
 - 1.4.4. Notification of Citations shall be forwarded to the applicable watershed district (Minnehaha Creek Watershed District - MCWD or Riley-Purgatory-Bluff Creek Watershed District - RPBCWD) for their records.
- 1.5. Suspension, Revocation, or Modification of Permit
 - 1.5.1. The City may suspend, revoke, or modify a permit authorizing a land development or building project if the permit was issued on the basis of incorrect information or if the work is in violation of any provision of City ordinances or laws of the State.
 - 1.5.2. The City shall suspend or revoke a permit if the violator has not responded to a Stop Work Order within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.
 - 1.5.3. A suspended or revoked permit may be reinstated after the Applicant has taken the remedial measures set forth in the NOV or Stop Work Order, has reimbursed the City for any corrective actions performed at City expense, and/or paid any outstanding fines for citations issued.
 - 1.5.4. Notification of suspended or revoked permits shall be forwarded to the applicable watershed district (Minnehaha Creek Watershed District - MCWD or Riley-Purgatory-Bluff Creek Watershed District - RPBCWD) for their records.

ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS CITY OF DEEPHAVEN

- 1.6. Additional Measures
 - 1.6.1. Financial Security
 - 1.6.1.1. The City should request financial security (i.e. check, escrow, etc) from the Permittee prior to the start of project work.
 - 1.6.1.2. The financial security should be sufficient to allow the City to perform actions necessary to terminate any unauthorized discharges and permanently stabilize the site with adequate control measures.
 - 1.6.1.3. The City may use financial security to recover any costs for corrective actions as required to abate violations.
 - 1.6.1.4. If the financial security is used to perform necessary corrective actions, the security should be re-established prior to any additional work proceeding.
 - 1.6.2. Illicit Discharge Assessment
 - 1.6.2.1. Assessments for Illicit Discharges should be levied if the violator has not responded to NOV's within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.
 - 1.6.2.2. Assessments may include reasonable expenses incurred in investigation of illicit discharge and enforcing corrective actions to eliminate discharge and repair harm.
 - 1.6.2.3. The City should consider the following when assessing damage due to illicit discharge:
 - 1.6.2.3.1 The harm done to the public health or the environment,
 - 1.6.2.3.2 The amount of effort put forth by the violator to remedy this violation,
 - 1.6.2.3.3 Any unusual or extraordinary investigation or enforcement costs incurred by the municipality.
 - 1.6.2.3.4 Any costs incurred by the City to perform corrective actions or repair damage due to inaction on the part of the violator.
 - 1.6.3. Legal Action
 - 1.6.3.1. The City may, through the City Attorney, petition the appropriate court(s) for issuance of preliminary or permanent injunctions to restrain or compel activities of property owners within the City.
 - 1.6.3.2. Legal action should be pursued by the City if all other enforcement efforts have been exhausted and the violator has not responded within a reasonable time or, if in the opinion of the City, the extents of the violation warrant it.

Section 2: NPDES Permit Referrals

- 2.1. Construction Stormwater
 - 2.1.1. Construction activities disturbing 1 acre or more must obtain a General Permit to Discharge Stormwater Associated with Construction Activity under the National Pollutant Discharge Elimination System / State Disposal System Program.
 - 2.1.2. If the City has used progressive enforcement to achieve compliance with City ordinance, MS4 requirements, and laws of the State and the violator has not responded within a reasonable time or, in the opinion of the City, the extents of the violation warrant it, the City shall refer the violation to the MPCA.
 - 2.1.3. The following information shall be provided to the MPCA:
 - 2.1.3.1. Site Location
 - 2.1.3.2. Name of Owner
 - 2.1.3.3. Name of Contractor
 - 2.1.3.4. Project Size

ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS CITY OF DEEPHAVEN

- 2.1.3.5. Description of Violation(s)
 - 2.1.3.6. Applicable Inspection Reports
 - 2.1.3.7. Any other applicable correspondence regarding violation
 - 2.1.4. Notification of communication to MPCA shall be forwarded to the applicable watershed district (Minnehaha Creek Watershed District - MCWD or Riley-Purgatory-Bluff Creek Watershed District - RPBCWD) for their records.
- 2.2. Industrial Stormwater
 - 2.2.1. Certain industrial activities, with a primary Standard Industrial Classification (SIC) code or narrative activity defined in the Code of Federal Regulations, must obtain a Permit to Discharge Stormwater Associated with Industrial Activity under the National Pollutant Discharge Elimination System / State Disposal System Program.
 - 2.2.2. If the City discovers that a Owner / Operator is performing an activity that requires an Industrial Stormwater Permit from the State but has not obtained it, the City shall notify the MPCA of the violation immediately.
 - 2.2.3. The following information shall be provided to the MPCA:
 - 2.2.3.1. Site Location
 - 2.2.3.2. Name of Owner / Operator
 - 2.2.3.3. Description of Industrial Activity
 - 2.2.3.4. SIC Code (if known)
 - 2.2.3.5. Any applicable correspondence
 - 2.2.4. Notification of communication to MPCA should be forwarded to the applicable watershed district (Minnehaha Creek Watershed District - MCWD or Riley-Purgatory-Bluff Creek Watershed District - RPBCWD) for their records.

Section 3: Recordkeeping

- 3.1. Construction Activity Violations
 - 3.1.1. Enforcement conducted pursuant to the ERPs shall include, at a minimum, the following documentation for construction activity violations:
 - 3.1.1.1. Site Plans
 - 3.1.1.2. Permits applicable
 - 3.1.1.3. Inspection Records
 - 3.1.1.4. Record of Enforcement Responses
 - 3.1.1.5. Violation Response Plans
 - 3.1.1.6. Any correspondence or documentation relevant to the violation
 - 3.1.1.7. Documentation showing resolution of violation
- 3.2. Illicit Discharge Violations
 - 3.2.1. Enforcement conducted pursuant to the ERPs shall include, at a minimum, the following documentation for illicit discharge violations:
 - 3.2.1.1. Report of alleged illicit discharge
 - 3.2.1.2. Diagram / Sketch of Violation Area
 - 3.2.1.3. Investigation / Inspection Records
 - 3.2.1.4. Record of Enforcement Responses
 - 3.2.1.5. Violation Response Plans
 - 3.2.1.6. Any correspondence or documentation relevant to the violation
 - 3.2.1.7. Documentation showing resolution of violation
- 3.3. The City shall keep any records required by the current MS4 General Permit for at least three years beyond the term of the permit.

ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS CITY OF DEEPHAVEN

Section 4: Enforcement Action Matrices (EAM)

Table 1 - EAM for Noncompliance with Construction and Post-Construction Requirements.

	TYPE OF VIOLATION				
Enforcement Measures For Use (Increasing in Severity Moving Down the Chart) 	Failure to Obtain Land Alteration Permit Prior to Starting Work	Minor Violations (Failure to Install, Maintain, or Upgrade Measures on Erosion and Sediment Control Plan)	Major Violation (Failure to Install, Maintain or Upgrade Measures on Erosion and Sediment Control Plan that Resulted in a Sediment Release from the Project Site)	Repeat Violation by a Party (Same Site)	Repeat Violation by a Party (Different Site than initial Noncompliance Site)
	Stop Work Order	Verbal Warning or Notice of Violation	Notice Of Violation	Notice Of Violation	Notice Of Violation
		Stop Work Order	Stop Work Order	Stop Work Order and Require Financial Security	Stop Work Order and Require Financial Security
	Legal Action	Suspension or Revocation of Permit	Suspension or Revocation of Permit and Citation	Suspension or Revocation of Permit and Citation	Suspension or Revocation of Permit and Citation
		Legal Action	Legal Action	Legal Action	Legal Action

This plan is a guide; any of the enforcement responses may be used at the City's discretion and the City may choose to escalate an enforcement case by skipping intermediate steps.

ENFORCEMENT RESPONSE PROCEDURES (ERPs) FOR MS4 PERMIT VIOLATIONS CITY OF DEEPHAVEN

Table 2 - EAM for Illicit Discharges.

	TYPE OF VIOLATION		
Enforcement Measures For Use (Increasing Severity Moving Down the Chart) 	First Failure to Remove Illicit Discharge	Repeat Violation by a Party (Same Site)	Repeat Violation by a Party (Different Site than initial Noncompliance Site)
	Verbal Warning	Notice Of Violation	Notice Of Violation
		Illicit Discharge Assessment	Illicit Discharge Assessment
	Notice Of Violation	Citation	Citation
	Illicit Discharge Assessment	Legal Action	Legal Action
	Citation		
	Legal Action		

This plan is a guide; any of the enforcement responses may be used at the City's discretion and the City may choose to escalate an enforcement case by skipping intermediate steps.

6. Checklists / Forms

MS4 Annual Assessment

Municipal Stormwater Permit Program

City of Deephaven

The Annual SWPPP Assessment shall be performed prior to completion of each Annual Report. Use this form to evaluate program compliance, appropriateness of BMP practices, and progress towards identified measurable goals. Note: This annual assessment shall be done to comply with the requirements of NPDES/SDS Permit MN R100001.

Reviewer(s): _____

Date: _____

1. Program Management (Part III and IV)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Stormwater program organizational structure to implement SWPPP.	☐	☐	☐	☐
2	Internal communication and coordination to implement SWPPP.	☐	☐	☐	☐
3	Effective use of outside groups and/or partnerships to implement SWPPP.	☐	☐	☐	☐
4	Review and evaluation of measurable goals as defined in SWPPP.	☐	☐	☐	☐
5	Process or procedures for establishing stormwater priorities.	☐	☐	☐	☐
6	Program documentation and record retention.	☐	☐	☐	☐
7	Submittal of annual report by June 30 th .	☐	☐	☐	☐
8	Prepared for permit compliance evaluation, audit, and provided materials requested by MPCA staff.	☐	☐	☐	☐

Comments:

Recommended Actions:

2. Impaired Waters/TMDLs (Part III.E)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Review of impaired waters and evaluation of SWPPP for appropriate reductions.	☐	☐	☐	☐
2	Implementing BMPs and making progress toward meeting each applicable Waste Load Allocation (WLA).	☐	☐	☐	☐
3	Estimated cumulative reductions in loading and implementing adaptive management strategies for achieving each WLA.	☐	☐	☐	☐

Comments:

Recommended Actions:

3. MCM 1 – Public Education and Outreach (Part III.D.1)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Distributed educational materials or conducted equivalent outreach activities on stormwater-related issue(s) of high priority.	☐	☐	☐	☐
2	Distributed materials or conducted equivalent outreach activities on illicit discharge recognition and reporting.	☐	☐	☐	☐
3	Implementation plan with identified target audiences and activities to reach measurable goals.	☐	☐	☐	☐

4	Utilization of other entities and partnerships as appropriate to implement a stormwater educational program.	☐	☐	☐	☐
5	Annual evaluation of education program measurable goals reviewed for adequacy and updated as necessary.	☐	☐	☐	☐

Comments:

Recommended Actions:

4. MCM 2 – Public Participation and Involvement (Part III.D.2)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Procedures to solicit public input and opinion annually on the adequacy of the SWPPP.	☐	☐	☐	☐
2	Consider oral statements and written comments by the public regarding the SWPPP.	☐	☐	☐	☐
3	Provide access to the SWPPP Document, Annual Reports and other documentation for public review upon request.	☐	☐	☐	☐
4	Process to consider input and make appropriate modifications to the SWPPP.	☐	☐	☐	☐
5	Documentation of all relevant written input received regarding the SWPPP and all responses from the permittee regarding input received on the SWPPP.	☐	☐	☐	☐
6	Documentation of date(s) and location(s) of events to meet requirements of MCM 2 and documentation of notices provided to the public regarding events scheduled to meet these requirements.	☐	☐	☐	☐

Comments:

Recommended Actions:

5. MCM 3 – Illicit Discharge Detection and Elimination (Part III.D.3)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Completed storm sewer system map updates showing the location of items in Part III.C.1.a. – d.	☐	☐	☐	☐
2	Ordinance or other regulatory mechanism in place that prohibits illicit discharges into MS4 conveyances and establishes appropriate enforcement procedures and actions.	☐	☐	☐	☐
3	Incorporation of illicit discharge detection into all maintenance and inspection activities.	☐	☐	☐	☐
4	Provides Illicit Discharge, Detection, and Elimination training for all field staff.	☐	☐	☐	☐
5	Identified priority areas likely to have illicit discharges and information used to guide subsequent inspections.	☐	☐	☐	☐
6	Developed and utilizes Enforcement Response Procedures (ERPs) for investigating, locating, and eliminating the source of illicit discharges and spills.	☐	☐	☐	☐
7	Informs businesses and the general public about illicit discharges/illegal dumping.	☐	☐	☐	☐
8	Evaluated non-stormwater discharges as described in Part I.A.2.	☐	☐	☐	☐
9	Maintains adequate documentation of illicit discharge reports, tracking, and elimination procedures as required in Part III.D.3.h.	☐	☐	☐	☐

Comments:

Recommended Actions:

6. MCM 4 – Construction Site Stormwater Runoff Control (Part III.D.4)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Ordinance or other regulatory mechanism in place that establishes erosion and sediment controls as stringent as the MPCA National Pollutant Discharge Elimination System/State Disposal System, Construction Stormwater General Permit.	☐	☐	☐	☐
2	Requirements for construction site operators to implement waste controls and erosion and sediment control BMPs.	☐	☐	☐	☐
3	Requirements for construction site operators to develop site plans prior to the start of construction activity for review and approval.	☐	☐	☐	☐
4	Written procedures for site plan review to ensure compliance with the requirements of the regulatory mechanism or ordinance.	☐	☐	☐	☐
5	Written procedures for site inspections to determine compliance with the requirements of the regulatory mechanism or ordinance.	☐	☐	☐	☐
6	Utilization of ERPs to ensure compliance with the regulatory mechanism or ordinance.	☐	☐	☐	☐
7	Written procedures for receipt and consideration of reports of noncompliance or other information.	☐	☐	☐	☐
8	Documentation of site plan review information for the proposed construction activity and documentation of site inspections of the active construction site.	☐	☐	☐	☐

Comments:

Recommended Actions:

7. MCM 5 – Post Construction Stormwater Management (Part III.D.5)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Ordinance or other regulatory mechanism to address post-construction stormwater runoff from new development and redevelopment meeting requirements for Part III.D.5.a.	☐	☐	☐	☐
2	Strategies for implementing structural stormwater BMPs for post-construction stormwater management.	☐	☐	☐	☐
3	Written procedures for site plan reviews prior to the start of construction activity to ensure compliance with requirements of the regulatory mechanism or ordinance.	☐	☐	☐	☐
4	Stormwater management limitations for infiltration techniques constructed in areas of contaminated soils, high groundwater, clayey soils, and soils with high infiltration rates.	☐	☐	☐	☐
5	Mitigation strategies when stormwater management for Total Suspended Solids (TSS) and/or Total Phosphorus (TP) cannot be achieved on the site of the original construction activity.	☐	☐	☐	☐
6	Documentation of site plan reviews, mitigation projects, legal mechanisms for long term maintenance of structural stormwater BMPs	☐	☐	☐	☐

Comments:

Recommended Actions:

8. MCM 5 – Pollution Prevention/Good Housekeeping for Municipal Operations (Part III.D.6)

	S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable	S	M	U	NA
1	Operation and Maintenance Program to prevent or reduce pollutant runoff from municipal operations.	☐	☐	☐	☐
2	Facilities inventory of permittee owned/operated facilities that contribute pollutants to stormwater discharges.	☐	☐	☐	☐
3	Development and implementation of BMPs for inventoried facilities and municipal operations, such as those described in Part III.D.6.b.(2).(a). – (l).	☐	☐	☐	☐
4	Development and implementation of BMPs for stormwater discharges that may affect Source Water Protection Areas.	☐	☐	☐	☐
5	Procedures and a schedule for determining TSS and TP treatment effectiveness of all permittee owned/operated stormwater ponds	☐	☐	☐	☐
6	Annual inspections of all structural stormwater BMPs.	☐	☐	☐	☐
7	At least one inspection of all outfalls and ponds prior to the expiration of the Permit.	☐	☐	☐	☐
8	Quarterly inspections of all stockpiles, storage, and material handling areas.	☐	☐	☐	☐
9	Repairs, replacement, or maintenance activities for structural stormwater BMPs based on inspection findings.	☐	☐	☐	☐
10	Employee training program commensurate with employee's job duties and addresses the importance of protecting water quality.	☐	☐	☐	☐
11	Documentation of maintenance activities, maintenance schedules, BMP inspections, and employee training.	☐	☐	☐	☐

Comments:

Recommended Actions:

Stormwater Pollution Prevention Plan (SWPPP) Review Checklist

CITY OF DEEPHAVEN

Review Information

Applicant: _____ Project name: _____
Application date: _____ Reviewer name: _____

SWPPP contains a combination of:

Yes	N/A	
☐	☐	Narrative
☐	☐	Plan sheets
☐	☐	Standard detail sheets (where appropriate)

Notes

SWPPP Information (does the Narrative contain the following)

Yes	N/A	
☐	☐	Describe the nature of the construction activity?
☐	☐	Address the potential for a discharge of sediment and/or other potential pollutants from the site?
☐	☐	Propose erosion prevention and sediment control Best Management Practices (BMPs) to control the discharge of sediment and/or other potential pollutants (IV.F) from the site.
☐	☐	Identify the person knowledgeable and experienced who will oversee the implementation of the SWPPP; the installation, inspection, and maintenance of the BMPs.
☐	☐	Identify the entity (name or title) responsible for performing future Operations and Maintenance (O&M) of the permanent stormwater management system?
☐	☐	List the chain of responsibility for SWPPP implementation for all operators on the site?
☐	☐	Identify the training requirements are satisfied.
☐	☐	Include the designs and calculations for BMPs.
☐	☐	Describe installation timing for all Erosion Sediment Control (ESC) Best Management Practices (BMPs)?
☐	☐	Describe procedures to amend the SWPPP and establish additional temporary ESC BMPs as necessary for site conditions?
☐	☐	Describe final stabilization methods for all exposed areas? (may be in narrative or on plan sheets)
☐	☐	Identify stormwater management measures needed to mitigate impacts identified as a result of environmental, historical, archaeological, or rare species reviews conducted for the project?
☐	☐	Identify additional measures being taken to protect Drinking Water Supply Management Areas?
☐	☐	If site discharges to special water or impaired reach, identify any site areas discharging to the special or impaired reach?
☐	☐	Methods used to minimize soil compaction and preserve topsoil must be described.
☐	☐	Identify construction areas that are adjacent to and drain to Public Waters for which the Minnesota Department of Natural Resources (DNR) has promulgated "work in waters restrictions" during specified fish spawning time frames.
☐	☐	In designing the stormwater controls, the SWPPP must account for expected amount, frequency, intensity, and duration of precipitation.
☐	☐	In designing the stormwater controls, the SWPPP must account for nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features.
☐	☐	In designing the stormwater controls, the SWPPP must account for the range of soil particle sizes expected to be present on the site.
☐	☐	Identify any specific chemicals and the chemical treatment systems that may be used for enhancing the sedimentation process on the site, and how compliance will be achieved with the permit requirements.
☐	☐	For design requirements or SWPPP components where Permittee determines that compliance with the requirement is infeasible; the SWPPP must document that determination and the substitute BMPs.

Comments: _____

Do plan sheets identify the following:

Yes	N/A	
☐	☐	Existing and proposed topography.
☐	☐	Locations and types of all temporary and permanent (including infiltration areas) ESC BMPs.
☐	☐	Stormwater flow directions and surface water divides for all pre- and post-construction drainage areas.
☐	☐	Impervious areas (Pre- and Post-Construction).
☐	☐	Soil types.

- | | | |
|--------------------------|--------------------------|---|
| ☐ | ☐ | Locations of potential pollutant-generating activities. |
| ☐ | ☐ | Locations of areas not to be disturbed (buffer zones). |
| ☐ | ☐ | Tabulated quantities of all erosion prevention and sediment control BMPs. |
| ☐ | ☐ | Location of areas where construction will be phased to minimize duration of exposed soil areas. |
| ☐ | ☐ | Areas of steep (3:1 or greater slope). |
| ☐ | ☐ | Locations of all wetlands, surface waters, and storm ponds that will receive pre- or post-construction site runoff. (If they do not fit on the plan sheets, use an arrow to note the direction and distance). |

Comments: _____

Standard plates or specifications:

- | | | |
|--------------------------|--------------------------|---|
| Yes | N/A | |
| ☐ | ☐ | Are standard plates or specifications included where appropriate? |

Part III - Stormwater Discharge Design Requirements

- | | | |
|--------------------------|--------------------------|---|
| Yes | N/A | |
| ☐ | ☐ | For any stormwater flow that will be channelized at the site, the stormwater controls must be designed to control both peak flowrates and total stormwater volume to minimize erosion at outlets and to minimize downstream channel and streambank erosion. |
| ☐ | ☐ | Are Temporary Sediment Basins required on site? (10 acres draining to common location or 5 acres App. A) |
| | | If Yes, are they: |
| Yes | N/A | |
| ☐ | ☐ | Adequately sized – 2-year, 24-hour storm, minimum 1,800 feet ³ /acre; or no calculative minimum 3,600ft ³ /acre? |
| ☐ | ☐ | Designed to prevent short circuiting? |
| ☐ | ☐ | Are outlets designed to remove floating debris? |
| ☐ | ☐ | Are outlets designed to allow complete drawdown? |
| ☐ | ☐ | Are outlets designed to withdraw water from the surface? |
| ☐ | ☐ | Do outlets have energy dissipation? |
| ☐ | ☐ | Have a stabilized emergency spillway? |
| ☐ | ☐ | Sediment Basins must be situated outside of surface waters and any natural buffers. |
| ☐ | ☐ | If compliant temporary sediment basin is not feasible due to site limitations, equivalent sediment controls described. |

Comments: _____

- | | | |
|--------------------------|--------------------------|---|
| Yes | N/A | |
| ☐ | ☐ | Permanent Stormwater Management System |
| Yes | N/A | |
| ☐ | ☐ | Is calculation of new impervious surface included in SWPPP? |
| ☐ | ☐ | Is the project located in and complying with Municipal Separate Storm Sewer Systems (MS4) Permit permanent treatment in lieu of the permanent treatment requirements of this permit? |
| ☐ | ☐ | Are calculations for permanent stormwater management system included (water quality volume of one inch of runoff to be retained on site)? |
| ☐ | ☐ | If infiltration is prohibited, other methods of volume reduction are considered. |
| ☐ | ☐ | If infiltration is prohibited, the remainder of the water quality volume is treated by a wet sedimentation basin, filtration system, regional ponding or equivalent methods prior to the discharge of stormwater to surface waters. |
| ☐ | ☐ | Does the proximity to bedrock preclude the installation of any of the permanent stormwater management practices? |
| | | If yes, has effort been made to provide some treatment using alternatives? |
| Yes | N/A | |
| ☐ | ☐ | Grassed swales |
| ☐ | ☐ | Filtration systems |
| ☐ | ☐ | Smaller ponds |
| ☐ | ☐ | Grit chambers |

Which method of permanent stormwater treatment has been selected?

Yes	N/A	
☐	☐	Infiltration or filtration (infiltration basins, infiltration trenches, rainwater gardens, sand filters, organic filters, bioretention areas, and enhanced swales, dry storage ponds with underdrain discharge, off-line retention areas, and natural depressions).
Yes	N/A	
☐	☐	Is infiltration/filtration appropriate to the site and land uses?
☐	☐	Has the system been designed to maintain pre-existing conditions (e.g., do not breach a perched water table that is supporting a wetland)?
☐	☐	Requirements to avoid excavation of the infiltration system until drainage area constructed and stabilized?
☐	☐	Are rigorous sediment and erosion controls planned to keep sediment and runoff away from the system?
☐	☐	Is a pretreatment device planned?
☐	☐	Is the filtration system designed to remove at least 80% of total suspended solids?
☐	☐	Is the system sufficient to infiltrate or filter the appropriate water quality volume of one inch?
☐	☐	Can water quality volume be discharged through the infiltration/filtration system in 48 hours or less?
		☐ Additional flows must bypass and be routed through stabilized discharge point.
☐	☐	Is there a way to visually verify the system is operating as designed?
☐	☐	Has appropriate testing been conducted to ensure a minimum of three feet of separation to the seasonal water table and/or bedrock?
☐	☐	Are calculations/computer model results included to demonstrate the design and adequacy of the infiltration or filtration system?
☐	☐	Is adequate maintenance access provided?
☐	☐	Is there a maintenance plan that identifies who will perform future maintenance?
☐	☐	Infiltration is prohibited when the infiltration system will receive discharges from or be constructed in:
		☐ Areas where vehicle fueling and maintenance occur.
		☐ Areas 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.
		☐ Areas where industrial facilities are not authorized to infiltrate industrial stormwater under an National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) Industrial Stormwater Permit issued by the MPCA.
		☐ Areas where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.
		☐ Areas of predominately Hydrological Soil Group D (clay) soils unless allowed by a local unit of government with a current MS4 Permit.
		☐ Areas within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features unless allowed by a local unit of government with a current MS4 permit.
		☐ Areas within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13., unless allowed by a local unit of government with a current MS4 Permit.
		☐ Areas where soil infiltration rates are more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour or as allowed by a local unit of government with a current MS4 Permit.

Comments: _____

Yes	N/A	
☐	☐	Wet sedimentation basin:
Yes	N/A	
☐	☐	Permanent volume of 1800 feet below outlet pipe for each acre draining.
☐	☐	Minimum depth of 3 feet; maximum depth of 10 feet.
☐	☐	Configured so scour or resuspension is minimized.
☐	☐	Water quality volume is one inch (or remainder of volume not reduced) of runoff from new impervious surfaces.
☐	☐	Basin outlets designed to discharge at less than 5.66 cubic feet per second (cfs) per acre of pond.
☐	☐	Basin outlets designed to prevent short circuiting.
☐	☐	Basin outlets designed to prevent discharge of floatables.
☐	☐	Stabilized emergency overflow.
☐	☐	Is adequate maintenance access provided?
☐	☐	Located outside of surface waters and any permanent natural buffers established under App. A.C.3.
☐	☐	Designed to avoid draining water from wetlands (unless the impact to the wetland is in compliance with the requirements of Appendix A.D).

Yes N/A
☐ ☐

Regional ponds:

Yes N/A
☐ ☐
☐ ☐
☐ ☐

- Is written authorization from owner of regional pond included in SWPPP?
- Is there no significant degradation of waterways between project and regional pond?
- Does regional pond design conform to the permit requirements for wet sedimentation basin?

Record Retention Requirements must be addresses in the SWPPP:

- ☐ ☐ The SWPPP including, all changes to it, and inspections and maintenance records must be kept at the site during construction by the Permittee(s) who has operational control of that portion of the site.

Comments: _____

Part IV – Construction Activity Requirements

Yes N/A
☐ ☐

Addresses erosion prevention measures:

Yes N/A
☐ ☐
☐ ☐
☐ ☐
☐ ☐

- Areas delineated on plans that are not to be disturbed or are areas where disturbance will be minimized.
- Areas of steep slopes will minimize disturbance or other techniques to minimize destabilization of steep slopes.
- Has appropriate construction phasing been implemented?
- Do exposed soils have erosion protection/cover initiated immediately and finished within 14 days (or 7 days Appendix A)?
- ☐ ☐ For DNR Public waters with “work in water restrictions” during specified fish spawning time frames, all exposed soil areas that are adjacent to and drain to these waters must complete the stabilization activities within 24 hours during the restriction period.
- ☐ ☐ Design includes stormwater conveyance channels to route water around unstabilized areas on the site and to reduce erosion, unless infeasible?
- ☐ ☐ Are wetted perimeters of ditches stabilized within 200 feet of surface water within 24 hours?
- ☐ ☐ Temporary or permanent ditches or swales that are being used as a sediment containment system during construction must be stabilized within 24 hours after no longer being used as a sediment containment system.
- ☐ ☐ Do pipe outlets have energy dissipation within 24 hours of connecting?
- ☐ ☐ Discharges from stormwater controls are directed to vegetated areas of the site (including any natural buffers) unless infeasible.

Comments: _____

Yes N/A
☐ ☐

Addresses sediment control measures:

Yes N/A
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐
☐ ☐

- Are sediment control practices established on down gradient perimeters and upgradient of any buffer zones?
- Are all inlets protected?
- Do stockpiles have sediment control and directed to be placed in areas away from surface waters or natural buffers?
- Do construction site entrances minimize street tracking?
- Plans to minimize soil compaction and, unless infeasible to preserve topsoil.
- 50 foot natural buffers preserved or (if not feasible) provide redundant sediment controls when a surface water is located within 50 feet of the project’s earth disturbances and drains to the surface water.

Comments: _____

Yes N/A
☐ ☐

Addresses dewatering and basin draining:

Yes N/A
☐ ☐
☐ ☐

- Is there a plan in place for dewatering to prevent nuisance conditions, erosion, or inundation of wetlands?
- If using filters with backwash water, either haul the backwash water away for disposal, return the backwash water to the beginning of the treatment process, or incorporate the backwash water into the site in a manner that does not erode into runoff.

Yes ☐ N/A ☐

Addresses inspections and maintenance:

Yes ☐ N/A ☐

- ☐ Identifies the person who will oversee the BMP inspection and maintenance?
- ☐ Inspections performed once every 7 days.
- ☐ Inspections performed within 24 hours of a rain event greater than 0.5 in/24 hours.
- ☐ Inspection and Maintenance records include:

Yes ☐ N/A ☐

- ☐ Date and time of inspection.
- ☐ Name of person(s) conducting inspections.
- ☐ Finding of inspections, including the specific location where corrective actions are needed.
- ☐ Corrective actions taken (including dates, times, and party completing maintenance activities).
- ☐ Date and amount of rainfall events greater than 0.5 in/24 hours.
- ☐ Rainfall amounts must be obtained by a properly maintained rain gauge installed onsite, or by a weather station that is within one mile or by a weather reporting system.
- ☐ Requirements to observe, describe, and photograph any discharge that may be occurring during the inspection.

Yes ☐ N/A ☐

Maintenance performed

Yes ☐ N/A ☐

- ☐ All discovered nonfunctional BMPs must be repaired, replaced, or supplemented with functional BMPs within 24 hours after discovery, or as soon as field conditions allow.
- ☐ Silt fence repaired/replaced/supplemented when nonfunctional, or one-half full; within 24 hours.
- ☐ Sediment basins drained and sediment removed when reaches one-half storage volume; within 72 hours.
- ☐ Sediment removed from surface waters within seven days.
- ☐ Construction site exits inspected, tracked sediment removed within 24 hours.
- ☐ All infiltration areas must be inspected for sediment from ongoing construction activity and that equipment is not being driven across the infiltration area.

Comments: _____

Yes ☐ N/A ☐

Addresses pollution prevention management measures:

Yes ☐ N/A ☐

- ☐ Storage, handling, and disposal of construction products, materials, and wastes.
- ☐ Fueling and maintenance of equipment or vehicles; spill prevention and response.
- ☐ Vehicle and equipment washing.
- ☐ No engine degreasing allowed on site.
- ☐ Containment of Concrete and other washout waste.
- ☐ Portable toilets are positioned so that they are secure.

Comments: _____

Yes ☐ N/A ☐

Addresses final stabilization:

Yes ☐ N/A ☐

- ☐ Stabilization by uniform perennial vegetative cover (70% density of its expected final growth).
- ☐ The permanent stormwater management system is constructed, meets all requirements, and is operating.
- ☐ Drainage ditches stabilized.
- ☐ All temporary synthetic and structural BMPs removed.
- ☐ Clean out sediment from conveyances and sedimentation basins (return to design capacity).
- ☐ If residential – temporary erosion protection and down gradient perimeter control has been completed and distribute homeowner factsheet.
- ☐ Submit Notice of Termination (NOT) to the MPCA.

Comments: _____

Requirements of Appendix A

Yes N/A

☐
☐

Does this site drain to a discharge point on the project that is within one mile of a Special or Impaired Water?

Yes	N/A	Which type of special water?	BMP category
☐	☐	Wilderness Areas	C.1, C.2, C.3
☐	☐	Mississippi River	C.1, C.2, C.3
☐	☐	Scenic or Recreational river	C.1, C.2, C.3
☐	☐	Lake Superior	C.1, C.2, C.3
☐	☐	Lake Trout Lakes	C.1, C.2, C.3
☐	☐	Trout Lakes	C.1, C.2, C.3
☐	☐	Scientific and Natural areas	C.1, C.2, C.3
☐	☐	Trout Streams	C.1, C.2, C.3, C.4
☐	☐	Calcareous fens	C.1, C.2

Yes	N/A	Impaired water	BMP category
☐	☐	TMDL and/or WLA not yet approved	C.1, C.2
☐	☐	Approved TMDL and WLA	BMPs in TMDL

TMDL = Total Maximum Daily Loads

WLA = Waste Load Allocations

BMP category

Requirement

Yes N/A

- | | | | |
|--------------------------|--------------------------|-----|---|
| ☐ | ☐ | C.1 | Stabilization initiated immediately and all soils protected in seven days/provide temp basin for five acres draining to common location. |
| ☐ | ☐ | C.2 | Treat water quality volume of one inch of runoff by retaining on site unless not feasible due to site conditions (See Part III.D.1. design requirements). |
| ☐ | ☐ | C.3 | Maintain buffer zone of 100 linear feet from Special Water. |
| ☐ | ☐ | C.4 | Temperature controls. |

Comments:

- ☐ ☐ Does this site have a discharge with the potential for adverse impact to wetlands:

Yes N/A

☐
☐

Has the wetland mitigation sequence (avoid, minimize, mitigate) been followed/satisfied by?

☐ Impact activity is permitted by either the Wetlands Conservation Act, DNR, or U.S. Army Corps of Engineers.

☐ Compliance with 7050.0186 is documented to the MPCA and approved.

Comments:

Subdivision / Non-Residential Lot Grading Review Checklist

CITY OF DEEPHAVEN

Review Information

Applicant: _____ Project name: _____
Application date: _____ Reviewer name: _____

General

Yes	N/A	
☐	☐	NPDES permit including SWPPP is referred to on plan.
☐	☐	Completed grading permit application form.
☐	☐	Final grading plan is signed by a licensed professional.
☐	☐	Submitted and signed Drainage Report.
☐	☐	Owner name(s) and addresses listed on Grading Plan.
☐	☐	Plan is 1"=50' or larger scale. North arrow shown.
☐	☐	Plan is drawn in two-foot contours. All finished contours and adequate existing contours are labeled.
☐	☐	Existing contours are dashed and proposed are solid.
☐	☐	Directional arrows are shown for proposed drainage.
☐	☐	Details of terrain and drainage are provided for areas adjacent to the proposed grading.
☐	☐	Existing public and private utilities are shown.
☐	☐	Boundaries of drainage areas shown (in drainage report).
☐	☐	Soil types shown (in drainage report).
☐	☐	Areas not to be disturbed clearly defined.
☐	☐	All receiving waters, including wetlands, within 1 mile shown or identified, including impaired waters.
☐	☐	Property limits are shown. Streets are labeled. Lot & block information. Street address shown, if known.
☐	☐	Proposed sidewalk shown for commercial/industrial sites.
☐	☐	County/MNDOT permit obtained for work in their ROW.
☐	☐	Schedule of BMP installation shown.
☐	☐	BMP details included.
☐	☐	Concrete washout management BMP addressed on plan.
☐	☐	Dewatering activities discharge to treatment facility.

The following areas are tabulated for residential (acres):

- | | | |
|--------------------------|--------------------------|--|
| ☐ | ☐ | Total platted area (site area). |
| ☐ | ☐ | Total area disturbed. |
| ☐ | ☐ | Total developable area (excluding floodway, natural steep slopes, & wetlands). |

The following areas are tabulated for non-residential (acres):

- | | | |
|--------------------------|--------------------------|---|
| ☐ | ☐ | Total project area. |
| ☐ | ☐ | Total impervious areas of project, existing & proposed. |
| ☐ | ☐ | Tabulation of total and impervious area by tax parcel. |

Comments: _____

Site Grading, Sediment & Erosion Control

Yes	N/A	
☐	☐	Down-slope sediment control scheduled before grading.
☐	☐	Adjacent property protected from drainage and sediment.
☐	☐	Stabilized vehicle exit(s) are provided, minimize number.
☐	☐	Silt fences are provided; in concentrated flow areas "high flow, heavy duty" type specified.

- | | | |
|--------------------------|--------------------------|--|
| ☐ | ☐ | All storm sewer inlets, existing and proposed have inlet protection/temporary sediment control that remains until up-slope areas are stabilized. |
| ☐ | ☐ | Maximum unbroken 3:1 or steeper slope of 75 feet horiz. |
| ☐ | ☐ | Control elevations for drainage ways are provided. |
| ☐ | ☐ | Minimum slope of small drainage swales is 2%. |
| ☐ | ☐ | Drainage easements for flow from more than 1 acre or 4 lots are seeded and protected with erosion control blankets or sodded. Blanket category specified per Mn/DOT 3885.2. Plan depicts required blanket locations. |
| ☐ | ☐ | Temporary stockpiles include additional sediment control and temporary cover after 14 days. |
| ☐ | ☐ | Percent of slope is shown for streets and drainage swales. |
| ☐ | ☐ | Fill & cut property line setbacks are >2' for cut slope ht. >10' or fill slope ht. >4' and setback is dimensioned on the plans. |
| ☐ | ☐ | All proposed lot corner elevations are shown. |
| ☐ | ☐ | Proposed elevations of garage and lowest floor, ground at front and rear of building, along with the structure type are indicated on the plan. |
| ☐ | ☐ | Top of foundation is minimum 6" above the ground. |
| ☐ | ☐ | Grade 1' below top of foundation is 10' from building. |
| ☐ | ☐ | Free board to structures, floor elevation or the grade adjacent to the building is at least 1' above any overflow elevation, and at least 2' above any 100-year water level, whichever is greater and min. 1' above FEMA flood elev. |
| ☐ | ☐ | Drainage flows away from structures at min. 2%. |
| ☐ | ☐ | Temporary or permanent diversion swales, stabilized with turf mat, pipe, riprap, are used at the top of slopes exceeding 4:1, when applicable. |
| ☐ | ☐ | Minimum lot slopes for vegetated areas are 2% minimum. |
| ☐ | ☐ | All exposed soil stabilized in 14 days. |
| ☐ | ☐ | Soil within 1 mile of special & impaired waters – stabilized within 7 days. |
| ☐ | ☐ | Temporary or permanent cover is indicated for all disturbed areas. Temporary seeding specifies seed mix including disk anchored mulch on all slopes > 200' or >5%. |
| ☐ | ☐ | Permanent cover specifies 4" min. topsoil, seed mix and disk anchored mulch, or 4" min. topsoil and sod. |
| ☐ | ☐ | Slopes steeper than 4: 1 and 4: 1 slopes longer than 30' are seeded and protected with erosion control blankets or sodded and staked. Blanket category specified per Mn/DOT 3885.2. Plan depicts required blanket locations. |
| ☐ | ☐ | Statement that slopes steeper than 4: 1 are stable from land-sliding and surface erosion. Geotechnical report for slopes >3:1. |
| ☐ | ☐ | For sites where temporary or permanent cover will not be complete by November 15; plan indicates adequate measures to control spring erosion & sedimentation. |

Comments: _____

Drainage Swales & Easements

- | Yes | N/A | |
|--------------------------|--------------------------|--|
| ☐ | ☐ | Drainage and Utility easements are shown and labeled on the plan. |
| ☐ | ☐ | Drainage easements are provided where concentrated flow is received from more than 1 adjacent lot and also where concentrated flow is received from more than 1 acre of adjacent property. |
| ☐ | ☐ | 100-year flow is contained in an easement. |
| ☐ | ☐ | Minimum drainage easements for flows from 1 acre or less or 4 lots or less are a minimum 20' wide. Ditch is a minimum of 2' deep with a 4' bottom and 4:1 slopes up to the easement line. 100-year runoff contained in easement. |
| ☐ | ☐ | Stormwater management areas are platted as outlots. A facility that will serve only the lot on which it is located may be in a drainage easement on that lot. |
| ☐ | ☐ | Emergency overflow with the high point elevation and direction of overflow are clearly marked on plans. |
| ☐ | ☐ | Emergency overflow swale meets minimum drainage easement standards noted above. |
| ☐ | ☐ | Easement documents are signed and submitted with recording fee or included in plat. |

Comments: _____

Outlets & Energy Dissipation

- | Yes | N/A | |
|--------------------------|--------------------------|--|
| ☐ | ☐ | Velocity computations are provided for drainage easements where concentrated flow from more than 2 acres or 8 lots is directed. |
| ☐ | ☐ | Where 10-year velocities exceed 5 ft/sec. permanent turf reinforcement mats are installed. Mats per Mn/DOT 3888.2 or manufacturer and product is specified. Plan depicts blanket locations and cross sections. |

- | | | |
|--------------------------|--------------------------|--|
| ☐ | ☐ | Ditches within 200' of surface water or Property line stabilized in 24 hrs after connection. |
| ☐ | ☐ | Discharge direction of flow generally 45 degrees or less to the flow direction of receiving ditch or stream. |
| ☐ | ☐ | Discharges to rear property lines shall generally be piped to at least the rear property line. |
| ☐ | ☐ | Where discharge pipe velocities are > 10 fps, or less, riprap and filter volumes are indicated in accordance with MnDOT Standard Plates. |
| ☐ | ☐ | Where discharge pipe velocities are > 10 fps, energy dissipater is provided along with riprap and filter. |
| ☐ | ☐ | Discharges on slopes steeper than 10% shall not be allowed unless discharge is into existing drainage ditch. |
| ☐ | ☐ | Evaluation of downstream adequacy provided (capacity and stability). |

Comments: _____

Temporary Sediment Basins

- | Yes | N/A | |
|--------------------------|--------------------------|---|
| ☐ | ☐ | Principal and emergency spillway designed per BMP storm frequency standards. |
| ☐ | ☐ | Fenced if slopes exceed 4:1. |
| ☐ | ☐ | Plan requires any permanent or temporary sediment ponds to be constructed before other construction starts. |

For areas draining less than 10 acres alternative sediment control (5 acres within 1 mile of impaired waters).

- | | | |
|--------------------------|--------------------------|--|
| ☐ | ☐ | Multiple lines of silt fence. |
| ☐ | ☐ | Small basins. |
| ☐ | ☐ | Vegetative strips (full permanent vegetation before upslope excavation). |

Comments: _____

Permanent Wet Retention Ponds

- | Yes | N/A | |
|--------------------------|--------------------------|--|
| ☐ | ☐ | Entire drainage/service area shown (in drainage report). |
| ☐ | ☐ | 50 scale or larger grading plan with pond cross-section. |
| ☐ | ☐ | Where possible, provide a forebay at the inlet; locate inlet and outlet at opposite ends of pond; and provide length to width ratio >3. |
| ☐ | ☐ | Inlets are at or below normal water level. |
| ☐ | ☐ | 10:1 bench is provided for first 1' of depth below the normal water elevation. |
| ☐ | ☐ | 3:1 max slope from normal water elevation to 100-year water elevation. |
| ☐ | ☐ | 3:1 max slope below normal water elevation. |
| ☐ | ☐ | Normal Water Elevation is shown. |
| ☐ | ☐ | 100-year high water elevation is shown. |
| ☐ | ☐ | Energy dissipation at outlet piping. |
| ☐ | ☐ | Emergency overflow spillway is provided to accommodate 100-yr event. High point elevation and direction of overflow are marked on plans. |
| ☐ | ☐ | Emergency overflow spillway is located to protect adjacent property and large fill sections. |
| ☐ | ☐ | 100-yr runoff which is designed to flow to the pond does not bypass the pond; unmodeled 100-yr flow does not enter the pond. |
| ☐ | ☐ | Minimum 10' width at bottom of spillway. |
| ☐ | ☐ | Minimum 8' wide maintenance access and turn-around for maintenance vehicles is shown on a slope ≤ 15%, cross slope ≤ 6%. |
| ☐ | ☐ | Seed mix Mn/DOT 33-261 or 33-361 for a 10' wide perimeter around the pond. Seed mix Mn/DOT 35-241 for the remainder of the pond outlot |
| ☐ | ☐ | DNR dam safety permit obtained if dam height is > 6' and storage to top of dam is > 15 acre-ft. |

Areas less than 1 acre not draining to a pond managed by:

- | | | |
|--------------------------|--------------------------|----------------|
| ☐ | ☐ | Grassed swales |
| ☐ | ☐ | Small ponds |
| ☐ | ☐ | Grit chambers |
| ☐ | ☐ | Other _____ |

Comments: _____

Volume Reduction / Water Quality BMPs

Yes	N/A	
Type(s) used:		
☐	☐	Sump manholes
☐	☐	SAFL / Preserver Baffles
☐	☐	Hydrodynamic Separators (HDS)
☐	☐	WQ Treatment Devices
☐	☐	Infiltration basins
☐	☐	Infiltration trenches
☐	☐	Bioretention basins
☐	☐	Iron Enhanced Sand Filters (IESFs)
☐	☐	Underground infiltration/filtration
☐	☐	Stormwater Reuse
☐	☐	Permeable Pavement
☐	☐	Rain Guardians
☐	☐	Other: _____
☐	☐	Pre-treatment provided prior to infiltration / filtration systems.
☐	☐	Site sensitivity analysis included.
☐	☐	Evaluation of hydrologic impact included.
☐	☐	Infiltration / filtration systems scheduled after full site development and stabilization
☐	☐	Runoff routed away from infiltration / filtration systems during construction
☐	☐	Infiltration / filtration sites controlled to minimize soil compaction.
☐	☐	Infiltration / filtration systems designed for 1" of runoff from total impervious surface areas for ultimate development, drains within 48 hours.
☐	☐	Emergency overflow provided to bypass flows from larger events.
☐	☐	Minimum vertical separation of 3' between seasonally saturated soils (or bedrock) and bottom of infiltration system.
☐	☐	Soil test results, system capacity calculations, and computer modeling results included.
☐	☐	Minimum 8' width maintenance access provided.
☐	☐	Infiltration / filtration system locations not permitted for vehicle fueling or service areas.

Comments: _____

Construction Stormwater Inspection Checklist

CITY OF DEEPHAVEN

Project Information

Project name: _____
Project address: _____ Permit number: _____
City: _____ State: _____ Zip code: _____

Inspection Information

Inspector name: _____ Phone number: _____
Date (mm/dd/yyyy): _____ Time: _____ ☐ am ☐ pm
Is Inspector certified in ESC and is it documented in the Stormwater Pollution Prevention Plan (SWPPP)? ☐ Yes ☐ No
Is this inspection routine or in response to a storm event: _____
Rainfall amount (if applicable): _____
Is the site within one aerial mile of special or impaired water? ☐ Yes ☐ No
If yes, follow Appendix A of the Construction Stormwater General Permit, MN R100001, and other applicable permit requirements.

Note: If NA is selected at any time, specify **why** in the comment area for that section.

Erosion Control Requirement (Part IV.B)

	Yes	No	NA
1. Have areas not to be disturbed been delineated?	☐	☐	☐
2. Soil stabilization where no construction activity for 14 days? (7 days were applicable, including stockpiles)	☐	☐	☐
3. Has the need to disturb steep slopes been minimized?	☐	☐	☐
4. All ditches stabilized 200' back from point of discharge within 24 hours? (not mulch)	☐	☐	☐
5. Are there erosion BMP's for onsite stockpiles?	☐	☐	☐
6. Are appropriate BMP's installed protecting inlets/outlets?	☐	☐	☐
7. Do pipe outlets have energy dissipation?	☐	☐	☐

Comments:

Sediment Control Requirement (Part IV.C.)

	Yes	No	NA
1. Perimeter control installed on all down gradient perimeters?	☐	☐	☐
2. Perimeter control trenched in where appropriate?	☐	☐	☐
3. 50 Foot-natural buffer maintained around all surface waters?	☐	☐	☐
If No, have redundant sediment controls been installed?	☐	☐	☐
4. Inlet protection on all catch basins and culvert inlets?	☐	☐	☐
5. Vehicle tracking Best Management Practices (BMPs) at all site exits?	☐	☐	☐
6. All tracked sediment removed within 24 hours?	☐	☐	☐
7. Are all infiltration systems staked and marked to avoid compaction?	☐	☐	☐

8. Are all infiltration areas protected with a pretreatment device?	☐	☐	☐
9. Do all stockpiles have perimeter control?	☐	☐	☐

Comments:

Maintenance-Erosion and Sediment Control BMPs (Part IV.E.)

	Yes	No	NA
1. Are all previously stabilized areas maintaining 90% ground cover?	☐	☐	☐
2. Any ditch erosion observed?	☐	☐	☐
3. Perimeter Control – Has sediment reached one half the height of the device?	☐	☐	☐
4. Are inlet protection devices maintained and functioning properly?	☐	☐	☐

Comments:

Other

	Yes	No	NA
1. Are all materials that can leach pollutants under cover?	☐	☐	☐
2. Has access been restricted to onsite hazardous materials?	☐	☐	☐
3. Does on-site fueling only occur in a contained area?	☐	☐	☐
4. Are all solid wastes being properly disposed of?	☐	☐	☐
5. Is the concrete washout area completely contained?	☐	☐	☐
6. Is the concrete washout area marked with a sign?	☐	☐	☐

Comments:

7. Were any discharges seen during this inspection, sediment, water, or otherwise? ☐ Yes ☐ No

If yes, state the exact location of all points of discharge. Photograph the discharge and describe the discharge (color, odor, foam, oil sheen, etc). How will it be removed? How did the discharge happen? How much was discharged? How will it be stopped, and how long will it take to stop? Is the discharge going into an adjacent site? Was the discharge a sediment delta? If yes, will the delta be recovered within 7 days?

8. Will a permanent stormwater management system be utilized in this project as required and in accordance with Part III.D of the permit? Describe:

9. Is any dewatering occurring on site? ☐ Yes ☐ No

If yes, where? What BMP is being used? How much water is being dewatered? Is the water clear? Where is the water being discharged to?

10. Is a copy of the SWPPP located on the construction site? ☐ Yes ☐ No
11. Has the SWPPP been followed and implemented on site? ☐ Yes ☐ No
12. Is a sedimentation basin required for this project as specified in the permit? ☐ Yes ☐ No
If yes, are they maintained as specified in the permit? ☐ Yes ☐ No
13. Is the topsoil on this project being preserved? ☐ Yes ☐ No
If yes, explain how the topsoil is being preserved. If not, explain why it was infeasible.

14. Are all infiltration systems marked to avoid compaction? ☐ Yes ☐ No
Do all infiltration areas have pretreatment devices? ☐ Yes ☐ No

15. Description of areas of non-compliance noted during the inspection, required corrective actions, and recommended date of completion of corrective actions:

16. Proposed amendments to the SWPPP:

17. Potential areas of future concern:

18. Additional comments:

Disclosures:

- After discovery, the Construction Stormwater General Permit, MN R100001, requires many of the deficiencies that may be found in this checklist be corrected within a specified period of time. See the permit for more details.
- This inspection checklist is an option for small construction sites. Large construction sites and linear projects require more extensive/more location specific inspection requirements.
- The Permittee(s) is/are responsible for the inspection and maintenance of temporary and permanent water quality management BMP's as well as erosion prevention and sediment control BMPs until another Permittee has obtained coverage under the Construction Stormwater General Permit, MN R100001, according to Part II.B.5., or the project has undergone Final Stabilization and a Notice of Termination has been submitted to the MPCA.

Pond Inspection Checklist

CITY OF DEEPHAVEN

Basin Information

Basin ID: _____	Inspector: _____
Type of Basin: _____	Date: _____
Location/Coordinates: _____	Temperature: _____
Owner: _____	Weather: _____
Year Constructed: _____	
Year Last Dredged: _____	
Normal Water Level: _____	
100 Yr High Water Level: _____	
Drainage Area: _____	
Surface Area at NWL: _____	
No. Inlets / Size: _____	
No. Outlets / Size: _____	
Design Perm. Pool Volume: _____	
Current Perm. Pool Volume: _____	
Design Discharge Rates: _____	

Maintenance Priority (1=Low 5=High)

Inspection:

Maintenance Item	Satisfactory/Unsatisfactory	Comments
A. Side Slopes (Inspect annually, after major storms)		
1. Vegetation		
a. adequate cover		
b. undesirable species/plants		
2. Erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of side slopes		
a. upstream slopes		
b. downstream slopes		
6. Seeps/leaks on downstream face		
7. Slope protection or riprap failure		
8. Other (specify)		
B. Principal Spillway (Inspect Annually)		
1. Low flow trash rack		
a. free of debris		
b. corrosion control		
2. Sediment accumulation inside pipe		
3. Condition		
a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
4. Sediment accumulation in manhole		
5. Sediment accumulation in catch basin		
6. Outfall channel functioning		
7. Outlet channel scouring		
8. Other (specify)		
C. Permanent Pool		
1. Undesirable vegetative growth		
2. Floating or floatable debris removal required		
3. Visible pollution		
4. Shoreline problem		
5. Sedimentation		

Maintenance Item	Satisfactory/Unsatisfactory	Comments
6. Other (specify)		
D. Condition of Outfalls into Pond		
1. Storm drain pipes		
2. Riprap at outfalls		
3. Headwalls		
4. Other (specify)		
E. Other		
1. Encroachment on pond or easement area		
2. Complaints from residents		
3. Aesthetics		
a. vegetation height		
b. litter/debris		
4. Public safety hazards (specify)		
5. Illicit Discharge		

Comments:

Structural Pollution Control Device Inspection Checklist

CITY OF DEEPHAVEN

SPCD Information

SPCD ID: _____	Inspector: _____
Type of SPCD: _____	Date: _____
Location/Coordinates: _____	Temperature: _____
Owner: _____	Weather: _____
Year Constructed: _____	
Date Last Cleaned: _____	
Drainage Area: _____	
No. Inlets / Size: _____	
No. Outlets / Size: _____	
Design Storage Depth: _____	
Current Storage Depth: _____	

Maintenance Priority
(1=Low 5=High)

Inspection:

Maintenance Item	Satisfactory/Unsatisfactory	Comments
1. Level of sediment in sump		
2. Sediment accumulation inside pipe(s)		
3. Floating Debris		
4. Corrosion		
5. Manhole condition		
a. cracks or displacement		
b. Minor spalling (<1")		
c. Major spalling (rebars exposed)		
d. Joint failures		
e. Water tightness		
6. Visible pollution / Illicit discharge		
7. Complaints from residents		
8. Public safety hazards (specify)		
9. Other (specify)		

Comments: _____

Outfall Inspection Checklist

CITY OF DEEPHAVEN

Outfall Information

Outfall ID:	_____	Inspector:	_____
Outfall Waterbody:	_____	Date:	_____
Location/Coordinates:	_____	Temperature:	_____
Year Constructed:	_____	Weather:	_____
Size:	_____		
Material:	_____		
Date Last Cleaned:	_____		

Maintenance Priority (1=Low 5=High)

Inspection:

Maintenance Item	Satisfactory/Unsatisfactory	Comments
1. Trashguard		
a. Properly attached		
b. Corrosion		
c. Free of debris		
2. Pipe condition		
a. Sediment accumulation in pipe		
b. Cracks or displacement		
c. Spalling / corrosion		
d. Joint failure / watertightness		
3. Riprap / energy dissipation		
4. Channel scouring downstream		
5. Visible pollution / Illicit discharge		
6. Complaints from residents		
7. Public safety hazards (specify)		
8. Other (specify)		

Comments: _____

**ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM
CITY OF DEEPHAVEN**

IDDE Report & Response Form

I. Incident Report

Incident Number: _____

Date/Time: _____ AM / PM Received By: _____

Location: _____

Initial Report of Conditions: _____

Reported By: _____ Phone: _____

II. Investigation

Date: _____ By: _____

Location Description/Storm Drain ID/Outfall: _____

Discharge Entered Storm Drain System/Receiving Waters? ____ Yes ____ No

Material Type

Hazardous

Sediment

Wastewater

Oil/Grease

Other _____

Unknown

Est. Quantity: _____

Additional Information: _____

Sample(s) Collected: ____ Yes ____ No

Photo(s) Taken: ____ Yes ____ No

Observed Land Use

Residential

Commercial/Industrial Stormwater Permit ____ Yes ____ No ____ Unknown

Public

Direct/Constructed Connections Found? ____ Yes ____ No

Source Description: _____

Source/Responsible Party: _____

III. Action and Closure

Referred To: _____ Date: _____

Action Taken: _____

Date Closed: _____

7. Documentation

7a. Employee Training Documentation

Employee Training Documentation

CITY OF DEEPHAVEN

[illegible]

7b. SWPPP Comments

7c. IDDE Reports

7d. Inspections

7e. Maintenance Activities

7f. Pond Assessment Data

7g. MS4 Annual Assessments

Appendix

Appendix A: Annual MS4 Reports

Appendix B: MS4 Pond, Wetland, and Lake Inventory



Facility ID	Facility Name
1	Cleveland Park
2	Pump Park
3	City Parking Lot
4	City Open Space
5	City Open Space
6	City Open Space/Trail ROW
7	Deephaven Beach
8	City ROW Easement
9	City Open Space
10	City Open Space
11	City Open Space
12	City Open Space
13	Thorpe Park
14	City Open Space
15	City Open Space
16	Hineline Property
17	City Open Space
18	Shuck Park
19	City Open Space
20	Village Hall Park
21	Open Space/Wetland
22	Carson's Bay Landing
23	Burton Park
24	Sandy Beach
25	Rocky Beach
26	Cottagewood Children's Park
27	Nocomo Beach
28	Robinson's Bay Beach

Lake Minnetonka

Legend

- Municipal_Facilities
- City Limits
- Hennepin County Lake
- MnDNR Public Water
- Parcels

0 1,200 Feet

Source: MnGeo Imagery, MnDOT MnDNR

MnDNR Public Waters

A	Lake Marion
B	Shaver's Lake
C	Lake Louise
D	Unnamed Wetland
E	Unnamed Wetland
F	Unnamed Wetland
G	Unnamed Wetland
H	Unnamed Wetland
I	Unnamed Wetland
J	Lake Hooper
K	Unnamed Wetland
L	Lake Minnetonka