

STANDARD OPERATING PROCEDURES

Minimum Control Measure 3 Illicit Discharge Detection and Elimination

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1. INTRODUCTION

1.1 Basis for the Standard Operating Procedures (SOPs)

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

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

1.2 Objectives of the SOPs

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

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

2. LOCATING PRIORITY AREAS

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

2.1 Review of Available Information

Activities and Definition

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

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

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

Preparation

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

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

2.2 Mapping Verification Process

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

2.3 Detection Process

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

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

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

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

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

- a. Transitory illicit discharges are typically one-time events resulting from spills, breaks, dumping, or accidents. Transitory illicit discharges are often reported to an authority through a citizen complaint line or following observation by a municipal employee during regular duties. Because they are not recurring, they are the most difficult to identify, trace, and remove. The best method to reduce, or eliminate before they occur, transitory discharges is through general public education, education of municipal response personnel, tracking of discharge locations, and enforcement of an illicit discharge ordinance (Appendix F).
- b. Intermittent illicit discharges occur occasionally over a period of time (several hours per day, or a few days per year). Intermittent discharges can result from legal connections to the storm drain system, such as a legal sump pump connection that is illegally discharging anything other than groundwater. Intermittent discharges can also result from activities such as drum washing in exterior areas. These types of discharges are less likely to be discovered, and are more difficult to trace and remove, because they generally occur on private

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

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

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

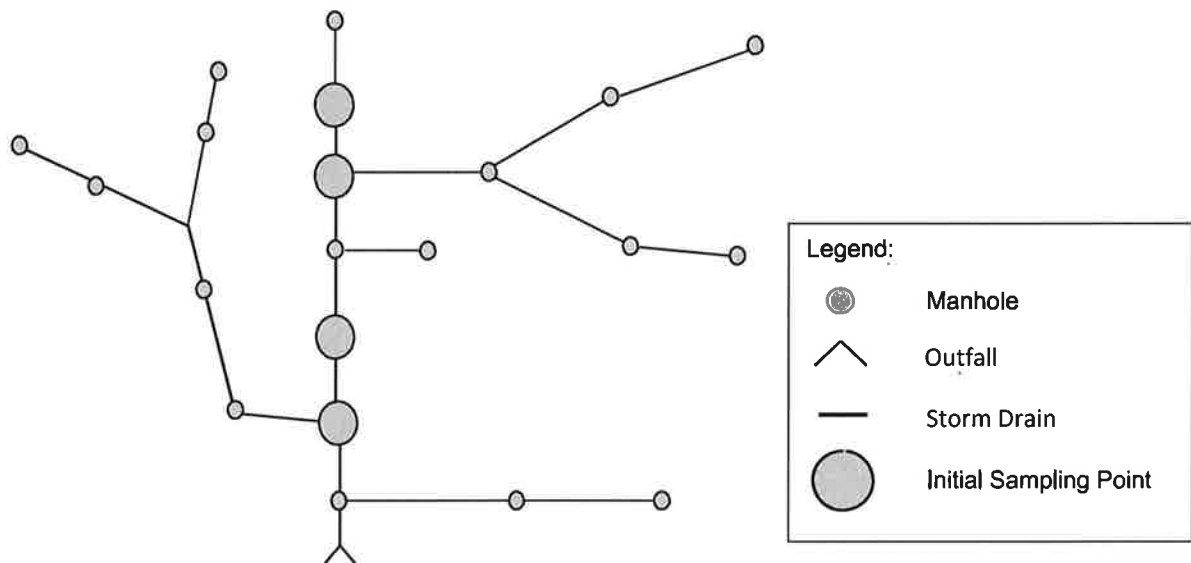
- a. Potential source identified: If a potential source for the illicit discharge was initially identified, steps should be taken to investigate the potential source site, such as inspecting the site and storm drain system in the vicinity of the site. If floor drains, sumps, or other suspect discharge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

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

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

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



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

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

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

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

- c. Sandbagging or damming: Sandbagging and damming is typically only conducted when the discharge flow has ceased since initial detection. Application of this technique will show whether the discharge is one time only (no water pools behind the sandbag or dam) or intermittent (water pools behind the sandbag). CWP provides the following explanation:
1. This technique involves placement of sandbags or similar barriers such as caulk dams within strategic manholes in the storm drain network to form a temporary dam that collects any intermittent flows that may occur. Any flow collected behind the sandbag is then assessed using visual observations or by indicator sampling. Sandbags are lowered on a rope through the manhole to form a dam along the bottom of the storm drain, taking care not to fully block the pipe (in case it rains before the sandbag is retrieved). Sandbags are typically installed at junctions in the network to eliminate contributing branches from further consideration. If no flow collects behind the sandbag, the upstream pipe network can be ruled out as a source of the intermittent

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

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

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

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

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

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

- f. Televising: Televised video inspections are a useful technique when an illicit connection or infiltration from a nearby sanitary sewer is suspected, but little evidence of the illicit discharge remains behind. The following two types of video cameras are available for use:
 - 1. A small camera that can be manually pushed on a stiff cable through storm drains to observe the interior of the piping.
 - 2. A larger remote operated video camera on treads or wheels that can be guided through storm drains to view the interior of the pipe. Typically the operator of the camera has access to a keyboard or audio voice-over to record significant findings on the videotape that is produced for future review and evaluation.
- g. Smoke testing: Smoke testing is a useful technique for tracing intermittent discharges or continuous discharges that have no apparent source site. Smoke is introduced into the storm drain system, and emerges at locations that are connected to the system. Smoke testing works best for short reaches of pipe, or in situations where pipe diameters are too small for video testing.

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

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

2.4 Citizen Call-In Program

Activities and Definition

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

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

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

Preparation

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

Process

- a. Use an IDDE Inspection Form to collect the appropriate information from the caller. Then, transfer the inspection form to the proper authority. (i.e. department head, stormwater specialist, construction inspector, code enforcement officer, or other assigned personnel.)
- b. Promptly investigate reported incidents.
- c. If an illicit discharge of unknown source is confirmed, follow the procedure of Tracing Illicit Discharges.
- d. If an illicit discharge known source is confirmed:
 - i. For Non-Emergency Situations: Follow the Illicit Discharges and Connection Enforcement policy outlined in the City's Enforcement Response Procedures.
 - ii. For Spills and Emergency Situations: Follow the City's Spill Response Plan (Appendix E).

2.5 Tracking Illicit Discharges

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

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

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Table 2 Example Illicit Discharge Database Attributes

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

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2.6 Opportunistic Illicit Discharge Observation

Activities and Definition

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

Preparation

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

Process

- a. Call the appropriate authority (i.e. department head, stormwater specialist, construction inspector, code enforcement officer or a supervisor)
- b. Assess the general area of the illicit discharge to see if you can identify its source.
- c. Whenever possible, take photographs of the suspected illicit discharge.
- d. Responding stormwater department personnel or code enforcement officer will complete the following:
 1. Use the IDDE Inspection Form to document observations.
 2. Obtain sample for visual observation and complete and Outfall Inspection Form, If applicable.
 3. Follow the procedure of IDDE – Tracing Illicit Discharges.
- e. If clean-up is required, use the following procedures:
 - i. For Non-Emergency Situations: Follow the Illicit Discharges and Connection Enforcement policy outlined in the City's Enforcement Response Procedures.
 - ii. For Spills and Emergency Situations: Follow the City's Spill Response Plan (Appendix E).

Documentation

- a. File all completed forms (i.e. IDDE Inspection Form, Outfall Inspection Form)
- b. Document any further action taken.

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2.7 Training

Activities and Definition

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

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

- a. Employees of City owned or operated facilities:
Including water quality impacts associated with illicit discharges and improper disposal of waste.
- b. MS4 engineers, development and plan review staff, land use planners:
Post-construction stormwater control requirements and associated BMPs.
- c. Field Staff:
Identification, investigation, termination, cleanup, and reporting of illicit discharges.
- d. Office Staff:
Illicit discharge reporting.
- e. Field and Other Staff:
Implementation of the construction and post-construction stormwater management program, including: permitting, plan review, inspections, and enforcement.
- f. All employees:
Employees who have primary construction, operation, or maintenance job functions that are likely to impact stormwater quality, in addition to law enforcement and emergency services personnel (i.e. fire department) who may be responsible for identifying illicit discharges.

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REFERENCES

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APPENDIX A

Definitions

Appendix A: Definitions

Authorized Enforcement Agency: the City of Alexandria.

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

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

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

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

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

Illicit Discharge Types:

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

Intermittent illicit discharges: Occur occasionally over a period of time (several hours per day, or a few days per year). Intermittent discharges can result from legal connections to the storm drain system, such as a legal sump pump connection that is illegally discharging anything other than groundwater. Intermittent discharges can also result from activities such as drum washing in exterior areas. These types of discharges are more likely to be discovered, and are less difficult to trace and remove, but can still present significant challenges. These discharges can have large or small impacts on waterbodies depending on pollutant content and the size of the receiving water body.

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

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

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

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

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

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

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

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

Pollutant: Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, pesticides, herbicides, and fertilizers; hazardous substances and wastes and

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

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

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

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

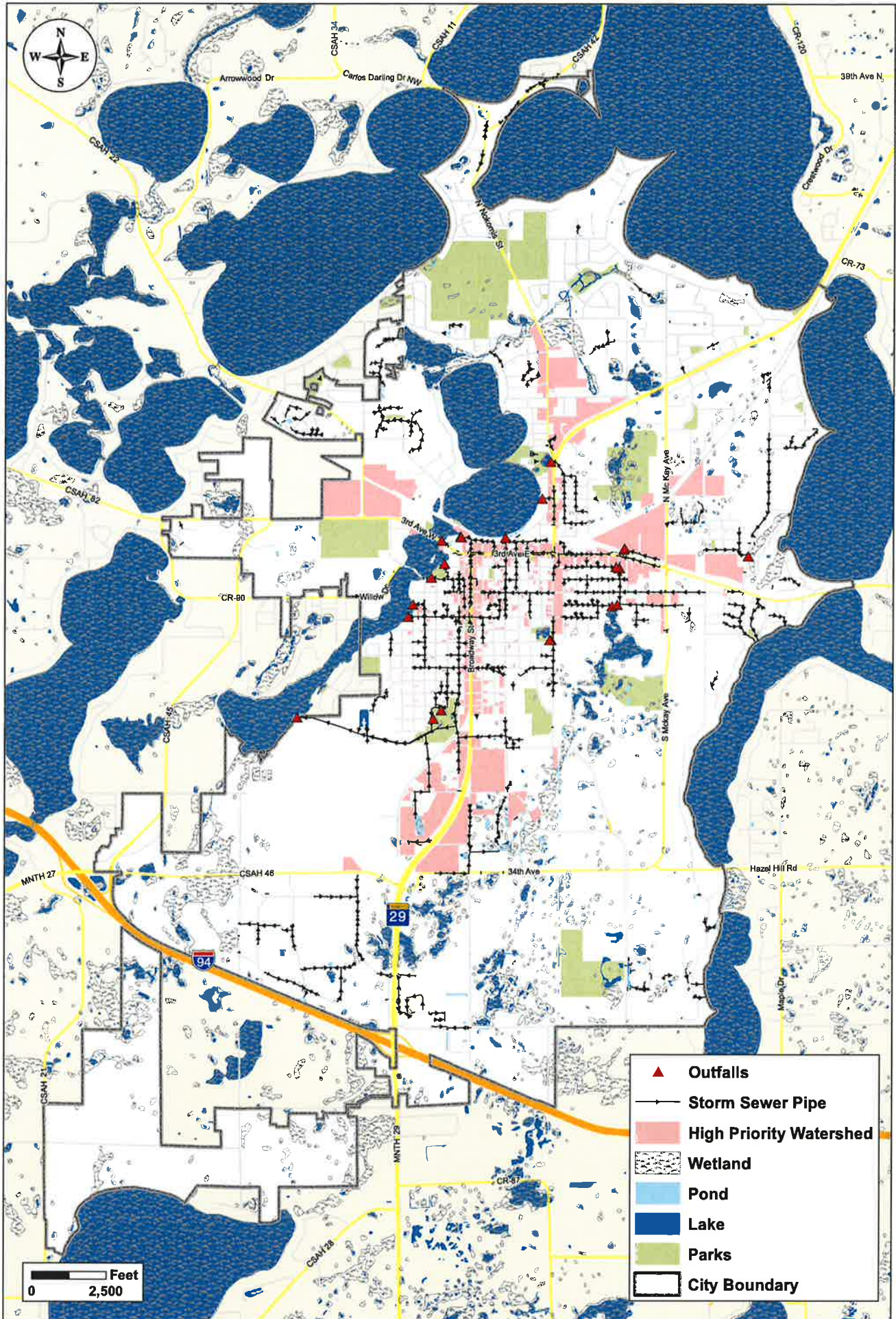
Stormwater: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

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

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

APPENDIX B
High Priority Illicit Discharge Evaluation Map

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High Priority Illicit Discharge Evaluation Map

City of Alexandria, MN



APPENDIX C
IDDE Inspection Form

Illicit Discharge Detection and Elimination Inspection Form (MCM 3)

<u>General Information:</u>			
Location of Violation: _____			
Name of trained staff conducting inspection:	Inspection Date:	Time: _____ AM _____ PM	
Name of violator (if available):	Weather:	Photos taken? <input type="checkbox"/> Yes <input type="checkbox"/> No	
<u>Inspection Reason:</u> <input type="checkbox"/> Regular Inspection <input type="checkbox"/> Complaint <input type="checkbox"/> Alleged illicit discharge	Inspection completed during dry weather condition (period of 72 or more hours of no precipitation): <input type="checkbox"/> Yes <input type="checkbox"/> No		
	Rainfall in past 24 hours: _____ (inches) Rainfall Data Source: <input type="checkbox"/> on-site gauge <input type="checkbox"/> weather station w/in 1 mi		
<u>Citizen Call-In Information (for citizen call-in incidents only):</u>			
Call Taken By:	Date of Call:	Time of Call: AM/PM	Contact Information for Caller (optional):
Incident Location (Provide one or more below)			
Outfall ID #: _____ Closest Street Address/Landmark: _____			
<u>Detection and Tracking:</u>		<u>Type of Discharge:</u>	
<input type="checkbox"/> Visual inspection <input type="checkbox"/> Mobile camera <input type="checkbox"/> Sample Collected <input type="checkbox"/> Other effective investigation tool: _____		<input type="checkbox"/> Illegal dumping <input type="checkbox"/> Sanitary sewer <input type="checkbox"/> Cross connection <input type="checkbox"/> Floor drain connection to storm sewer <input type="checkbox"/> Inflow / infiltration <input type="checkbox"/> Failing septic system <input type="checkbox"/> Pump station failure <input type="checkbox"/> Other: _____	
<input type="checkbox"/> Inlet (City ID # _____)		<input type="checkbox"/> Outlet (City ID # _____)	
<u>Description of Discharge:</u>			
<input type="checkbox"/> Flow present? <input type="checkbox"/> Estimated discharge _____ <input type="checkbox"/> Water Color _____ <input type="checkbox"/> Odor _____		<input type="checkbox"/> Turbidity _____ <input type="checkbox"/> Floatables _____ <input type="checkbox"/> Sedimentation _____ <input type="checkbox"/> Oil Sheen _____	
<u>Reporting:</u>			
Responsible Party: _____ (if identified)		Follow-up Required? <input type="checkbox"/> Yes <input type="checkbox"/> No	
MN State Duty Officer Notified? <input type="checkbox"/> Yes <input type="checkbox"/> No (1-800-422-0798) Duty Officer Report # _____		Name of Staff to conduct Follow-up: _____	
Enforcement used: <input type="checkbox"/> Verbal Warning Date: _____		<input type="checkbox"/> Written Warning Date: _____	
<input type="checkbox"/> Stop Work Order Date: _____		<input type="checkbox"/> Other: _____ Date: _____	
Corrective Actions (including completion schedule and resolution date): _____			

APPENDIX D
Outfall Inspection Form

City of Alexandria

Outfall Inspection Form

<u>General Information:</u>		
Outfall ID # _____	Inspected by: _____	Date: _____
Last Rain Date (if known): _____ Amount: _____ (inches) Today's Rainfall Amount: _____ (inches)		
Address/Nearby Landmark: _____		
Weather Conditions: <input type="checkbox"/> Clear Skies <input type="checkbox"/> Overcast <input type="checkbox"/> Other: _____		Photos taken? <input type="checkbox"/> Yes <input type="checkbox"/> No
<u>Outfall Data:</u>		
<u>Outfall Type:</u> <input type="checkbox"/> Manhole <input type="checkbox"/> Flared End <input type="checkbox"/> Swale <input type="checkbox"/> Weir <input type="checkbox"/> Flume <input type="checkbox"/> Culvert <input type="checkbox"/> Other	<u>Outfall Condition:</u> <input type="checkbox"/> Clear/Functioning <input type="checkbox"/> Needs Maintenance/Cleaning <input type="checkbox"/> Needs Repair <input type="checkbox"/> Needs Replacement Immediate Action Needed? <input type="checkbox"/> Yes <input type="checkbox"/> No Other Notes: _____	
<u>Discharge Data:</u>		
Visible Flow? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Submerged	Flow Depth: _____ (approx. inches)	Significant erosion and/or sedimentation? <input type="checkbox"/> Yes <input type="checkbox"/> No
If flow is present, describe and check all that apply:		
<input type="checkbox"/> Colored Water _____ <input type="checkbox"/> Odor _____ <input type="checkbox"/> Murky, Turbid _____ <input type="checkbox"/> Floating objects _____	<input type="checkbox"/> Scum _____ <input type="checkbox"/> Oily Sheen _____ <input type="checkbox"/> Sludge Present _____ <input type="checkbox"/> Clear _____ <input type="checkbox"/> Suds _____	
<u>Illicit Discharge Details:</u>		
<input type="checkbox"/> Follow-up Required <input type="checkbox"/> IDDE Source Identified <input type="checkbox"/> Responsible Party Name <input type="checkbox"/> Potential Pollutants? <input type="checkbox"/> Enforcement Response Followed	Yes / No _____ Yes / No _____ _____ Yes / No _____ Yes / No _____	<input type="checkbox"/> ≥ 72 hours since last rainfall <input type="checkbox"/> Sample Collected? <input type="checkbox"/> Photos taken? <input type="checkbox"/> Corrective Action Required?
Yes / No _____ Yes / No _____ _____ Yes / No _____ Yes / No _____		
<u>Additional Information:</u>		
Comments / Corrective Action Conducted: _____ _____ _____		

APPENDIX E
Spill Response Plan



City of Alexandria

Spill Response Plan

Emergency Contact Information

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

Spill Response Plan

Step 1: Approach the Scene

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

Step 2: Secure the Scene

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

Step 3: Identify the Hazards

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

Step 4: Assess the Situation

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

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

Step 5: Report the Spill

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

Step 6: Contain the Spill

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

Step 7: Clean Up the Spill

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

Step 8: Complete Spill Documentation and Follow-up

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

APPENDIX F
Ordinances

ORDINANCE NO. 722

2ND SERIES

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

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

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

Section 12.01 General Provisions

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

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

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

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

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

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

- A. **Applicant** - Any person or group that applies for a building permit, subdivision approval, or a permit to allow land disturbing activities. Applicant also means that person's agents, employees, and others acting under this person's or group's direction. The term "applicant" also refers to the permit holder or holders and the permit holder's agents, employees, and others acting under this person's or group's direction.
- B. **Best Management Practice (BMP)** - Best management practice is a technique or series of techniques which are proven to be effective in controlling runoff, erosion and sedimentation.
- C. **Buffer** - A regulated area where scrutiny will be exercised over activities near wetlands and water bodies and a non-disturbance area where natural vegetation must be maintained.
- D. **Common Plan of Development or Sale** - A contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, or on different schedules, but under one proposed plan. This item is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land

disturbing activities may occur.

- E. **Developer** - Any person, group, firm, corporation, sole proprietorship, partnership, state agency, or political subdivision thereof engaged in a land disturbance activity.
- F. **Development** - Any land disturbance activity that changes the site's runoff characteristics in conjunction with residential, commercial, industrial or institutional construction or alteration.
- G. **Dewatering** - The removal of water for construction activity. It can be a discharge of appropriated surface or groundwater to dry and/or solidify a construction site. It may require Minnesota Department of Natural Resources permits to be appropriated and if contaminated may require other Minnesota Pollution Control Agency (MPCA) permits to be discharged.
- H. **Discharge** - The release, conveyance, channeling, runoff, or drainage, of storm water including snowmelt, from a construction site.
- I. **Energy Dissipation** - This refers to methods employed at pipe outlets to prevent erosion. Examples include, but are not limited to; aprons, riprap, splash pads, and gabions that are designed to prevent erosion.
- J. **Erosion** - Any process that wears away the surface of the land by the action of water, wind, ice, or gravity.
- K. **Erosion Control** - Refers to methods employed to prevent erosion. Examples include soil stabilization practices, horizontal slope grading, temporary or permanent cover, and construction phasing.
- L. **Exposed Soil Areas** - All areas of the construction site where the vegetation (trees, shrubs, brush, grasses, etc.) or impervious surface has been removed, thus rendering the soil more prone to erosion. This includes topsoil stockpile areas, borrow areas and disposal areas within the construction site. It does not include temporary stockpiles or surcharge areas of clean sand, gravel, concrete or bituminous, which have less stringent protection. Once soil is exposed, it is considered "exposed soil," until it meets the definition of "final stabilization."
- M. **Filter Strips** - A vegetated section of land designed to treat runoff as overland sheet flow. Their dense vegetated

cover facilitates pollutant removal and infiltration.

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

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

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

- O. **Hydric Soils** - Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.
- P. **Hydrophytic Vegetation** - Macrophytic (large enough to be observed by the naked eye) plant life growing in water, soil or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.
- Q. **Illicit Discharge** - Any direct or indirect non- stormwater discharges to the storm drain system, except exempted in

Section 12.13 of this Ordinance.

- R. **Illicit Connection** - Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including, but not limited to, any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by the City; or, any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by the City.
- S. **Impervious Surface** - A constructed hard surface that either prevents or retards the entry of water into the soil, and causes water to run off the surface in greater quantities and at an increased rate of flow than existed prior to development. Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas, and concrete, asphalt, or gravel roads.
- T. **Land Disturbance Activity** - Any land change that may result in soil erosion from water or wind and the movement of sediments into or upon waters or lands within this government's jurisdiction, including construction, clearing & grubbing, grading, excavating, transporting and filling of land. Within the context of this Section, land disturbance activity does not mean: Minor land disturbance activities such as home gardens and an individual's home landscaping, repairs, and maintenance work, unless such activity exceeds one half acre in exposed soil. Additions or modifications to existing single family structures which result in creating under one half acre of exposed soil or impervious surface and/or is part of a larger common development plan. Construction, installation, and maintenance of fences, signs, posts, poles, and electric, telephone, cable television, utility lines or individual service connections to these utilities, which result in creating under one half acre of exposed soil or impervious surface. Tilling, planting, or harvesting of agricultural, horticultural, or silvicultural (forestry) crops. Emergency work to protect life, limb, or property and emergency repairs, unless the land disturbing activity would have otherwise required an approved erosion and sediment control plan, except for the emergency. If such a plan would have been

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

- U. **Land Locked Basin** - Defined as a low area such as a lake, pond, or wetland entirely surrounded by land with no regularly active outlet channel.
- V. **Large Site Construction Activity** - Includes clearing, grading or excavation that disturbs one (1) or more acres or less than five acres of total land area that is part of a larger common plan of development or sale if the larger common plan will disturb five (5) acres or more.
- W. **National Pollutant Discharge Elimination System (NPDES)** - The program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits under the Clean Water Act (Sections 301, 318, 402, and 405) and United States Code of Federal Regulations Title 33, Sections 1317, 1328, 1342, and 1345.
- X. **Native Vegetation** - The presettlement (already existing in Minnesota at the time of statehood in 1858) group of plant species native to the local region, that were not introduced as a result of European settlement or subsequent human introduction.
- Y. **Non-Stormwater Discharge** - Any discharge to the storm drain system that is not composed entirely of stormwater.
- Z. **Ordinary High Water Mark** - The boundary of public waters and wetlands, and shall be an elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel. For reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.
- AA. **Owner** - The person or party possessing the title of the land on which the construction activities will occur; or if the construction activity is for a lease holder, the party or individual identified as the lease holder; or the contracting government agency responsible for the construction activity.
- BB. **Paved Surface** - A constructed hard, smooth surface made of

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

CC. Permanent Cover - Means "final stabilization."

Examples include grass, gravel, asphalt, and concrete. See also the definition of "final stabilization."

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

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

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

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

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

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

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

KK. Small Site Construction Activity - Includes clearing, grading or excavation, that disturbs one-half acre ($\frac{1}{2}$) to one (1) acre, or less than one (1) acre of total land area that is part of a larger common plan of development or sale that will ultimately disturb equal to or greater than one (1) acre.

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

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

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

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

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

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

controls.

- RR. Stormwater Manual** - The most recent version of the Minnesota Pollution Control Agency (MPCA) Minnesota Stormwater Manual. This Manual is the compilation of design, performance, and review criteria approved by the by the City for stormwater management practices.
- SS. Structure** - Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, roads, parking lots, and paved storage areas.
- TT. Subdivision** - Any tract of land divided into building lots for private, public, commercial, industrial, etc. development.
- UU. Surface Water** - All streams, lakes, ponds marches, wetlands, reservoirs, springs, rivers, drainage systems, waterways, watercourses and irrigation systems whether natural or artificial public or private.
- VV. Temporary Erosion Protection** - Short-term methods employed to prevent erosion. Examples of such protection are straw, mulch, erosion control blankets, wood chips, and erosion netting.
- WW. Vegetated or Grassy Swale** - A vegetated earthen channel that conveys storm water, while treating the stormwater by biofiltration. Such swales remove pollutants by both filtration and infiltration.
- XX. Waters of the State** - As defined in Minnesota Statutes section 115.01, subdivision 22 the term „waters of the state“ means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.”
- YY. Wet Detention Facility** - Depressions constructed by excavation and embankment procedures to store excess runoff temporarily on a site. After a runoff event, overflow from the pond is released at a controlled rate by an outlet device designed to release flows at various peak rates and elevations until the design elevation of the pool is reached. Wet detention facilities maintain a permanent pool of water between storm events. Wet detention facilities are located to collect stormwater inflows from adjacent

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

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

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

- A. **Use of Impervious Surfaces:** No person shall apply items included in the definition of "prohibited discharge" on impervious surfaces or within stormwater drainage systems with impervious liners or conduits.
- B. **Unimproved Land Areas:** Except for driveways, sidewalks, patios, areas occupied by structures, landscaped areas, or areas that have been otherwise improved, all areas shall be covered by plants or vegetative growth.
- C. **Use of Pervious Surfaces:** No person shall deposit grass clippings, leaves, or other vegetative materials, with the exception of normal mowing or weed control, within natural or manmade watercourses, wetlands, or within wetland buffer areas. No person shall deposit items included in the definition of "prohibited discharge" except as noted above.

Section 12.04 Stormwater Management Plans and Permits.

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

- 1 Every applicant for a building permit that involves disturbing $\frac{1}{2}$ acre or more of land, subdivision approval, or other permit to allow $\frac{1}{2}$ acre or more land disturbing activities must submit a stormwater management plan (also referred to as a Stormwater Pollution Prevention Plan - SWPPP) to the City. No land shall be disturbed nor shall any building permit, subdivision approval, or permit to allow land disturbing activities shall be issued until approval of this plan.
- 2 All plans, excepting those required as a part of small site construction activity, shall be consistent with National Pollution Discharge Elimination Permit (NPDES) requirements, and the filing or approval requirements of the Douglas County Soil and Water Conservation District or other regulatory bodies. All stormwater mitigation and management technologies shall be consistent with the most recent version of the Minnesota Pollution Control Agency (MPCA) General Stormwater Permit for Construction Activity and the Minnesota Stormwater Manual. This Manual is the compilation of design, performance, and review criteria approved by the City for stormwater management practices.

Section 12.05 Stormwater Management Plan Submittal Requirements.

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

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

shall be noted.

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

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

A. Identification and description including:

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

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

1. Project map - An 8.5 by 11 inch United States Geological Survey (USGS) 7.5 minute quad or equivalent map indicating site boundaries and existing elevations.
2. Property lines and lot dimensions.
3. Existing zoning classifications for land within and abutting the development, including shoreland, floodway, flood fringe, or general floodplain, and other natural resource overlay districts.
4. All buildings and outdoor uses including all dimensions and setbacks.
5. All public and private roads, interior roads, driveways and parking lots.
6. Identify all natural and artificial water features (including drain tiles that would affect the project site) on site and within one (1) mile of project boundary, including, but not limited to lakes, ponds, streams (including intermittent streams), and ditches. Show ordinary high water marks of all navigable waters, 100-year flood elevations and delineated wetland boundaries, if any. If not available, appropriate flood zone determination or wetland delineation, or both, may be required at the applicant's expense.
7. Map of watershed drainage areas, soil types, infiltration rates, depth to bedrock, and depth to seasonal high water table.
8. Steep slopes where areas of 12% or more existing over a distance for 50 feet or more.
9. Bluff areas where the slope rises at least 25 feet above the toe of the bluff and the grade of the slope from the toe of the bluff to a point 25 feet or more above the toe of the bluff averages 30% or greater.
10. Wooded area and tree survey as defined by the zoning authority.
11. Agricultural Land preservation area(s), County Biological Survey sites, or other officially designated natural resource.
12. Hydrologic calculations for volume runoff, velocities, and peak flow rates by watershed, for the 2-yr, 10-yr, and 100-yr 24-hour storm events. These shall include: pre-existing peak flow rates, assumed runoff curve numbers, time of concentration used in calculations, and the 100 - year flood elevation with and without the floodway if a flood insurance study has been done by the National Flood Insurance Program.

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

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

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

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

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

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

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

Section 12.06 Stormwater Management Plan Review Procedures.

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

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

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

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

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

- A. A change in design, construction, operation, maintenance, weather, or seasonal conditions that has a significant effect on the discharge of pollutants to surface waters or underground waters.
- B. Inspections indicate the plan is not effective in eliminating or significantly minimizing the discharge of pollutants to surface waters or underground waters or that the discharges are causing water quality standard exceedances.
- C. The plan is not achieving the general objectives of controlling pollutants or is not consistent with the terms and conditions of the permit.

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

Section 12.08 Stormwater Management Plan Inspections and Enforcement.

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

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

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

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

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

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

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

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

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

- C. Correct the deficiency or hire a contractor to correct the deficiency. The issuance of a permit constitutes a right-of-entry for the City or its contractor to enter upon the construction site for the purpose of correcting deficiencies in erosion control.
- D. Require reimbursement to the City for all costs incurred in correcting stormwater pollution control deficiencies. If payment is not made within thirty (30) days after the City incurs costs, the City will halt all work on the project site and assess any reimbursement costs to the property. As a condition of the permit, the owner shall waive notice of any assessment hearing to be conducted by the City, concur that the benefit to the property exceeds the amount of the proposed assessment, and waive all rights by virtue of Minnesota Statute 429.081 to challenge the amount or validity of assessment.

Subd. 4. Right of Entry and Inspection.

- A. **Powers.** The applicant shall allow the City of Alexandria and their authorized representatives, upon presentation of credentials to:
 - 1. Enter upon the permitted site for the purpose of obtaining information, examination of records, conducting investigations or surveys.
 - 2. Bring such equipment upon the permitted development as is necessary to conduct such surveys and investigations.
 - 3. Examine and copy any books, papers, records, or memoranda pertaining to activities or records required to be kept under the terms and conditions of this permitted site.
 - 4. Inspect the stormwater pollution control measures.
 - 5. Sample and monitor any items or activities pertaining to stormwater pollution control measures.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Subd. 12. Flood Protection:

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

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

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

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

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

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

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

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

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

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

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

- K. Ensure filtration systems with less than three (3) feet of separation from seasonally saturated soils or from bedrock are constructed with an impermeable liner.
- L. The infiltration practice shall not be used in Hydrologic Soil Group (HSG) D soils without soil corrections.
- M. Provide an eight foot wide maintenance access.

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

- A. If the drainage area is within one of the following subwatersheds that drains directly to a lake: Agnes- Henry, Burgen, Carlos, Cowdry, Darling, Geneva, Latoka, Le Homme Dieu, Victoria, or Winona, the permanent pool (dead pool) volume below the normal outlet must be greater than or equal to the runoff from a 2.5-inch storm event over the drainage area (see Figure III-5).
- B. If the drainage area is within one of the following subwatersheds that drains directly to a wetland: Connie, North Wetlands, SE Wetlands, SW Wetlands, the permanent pool volume must allow for 1,800 cubic feet for each acre that drains to the pool (see Figure III-5).
- C. Permanent pool average depth between 3 and 10 feet.
- D. The basin must provide live storage for water quality volume of one (1) inch of runoff (or one (1) inch minus the volume of stormwater treated by another system on the site) from the new impervious surfaces created by the project.
- E. The basin must minimize scour and the suspension of solids.
- F. The basin outlet must be designed to prevent short- circuiting and the discharge of floating debris, and the basin outlet must not discharge one inch of runoff from the impervious watershed area at a rate greater than 5.66 cubic feet per second (cfs) per acre of surface area of the pond.
- G. An emergency outlet to control the 100-year storm event.

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

Subd. 16. Outlet and Inlet Pipes:

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

outlet velocities are experienced.

G. Submerged outlet pipes from ponds are not allowed.

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

A. Permanent stormwater management facilities may not receive discharges from or be constructed in areas where:

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

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

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

D. The City may restrict the use of infiltration features to meet post-construction requirements for stormwater management, without higher engineering review, if the infiltration techniques will be constructed in the following areas where:

1. Soils are predominately Hydrologic Soil Group D (clay) soils.
2. Drinking Water Supply Management Areas are present, as defined by Minn. R. 4720.51000, subp.13, unless precluded by a local unit of government with an MS4 permit.
3. Soil infiltration rates are more than 8.3 inches per hour unless soils are amended to flow the infiltration rate

below 8.3 inches per hour.

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

- A. If the project meets one of the limitations outlined above.
- B. If the applicant implements to the maximum extent possible other volume reduction practices, besides infiltration, on the site but may not meet the requirements for post-construction stormwater management.

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

- A. No private stormwater facilities may be approved unless a maintenance plan is provided that defines how access will be provided, who will conduct the maintenance, the type of maintenance and the maintenance intervals. At a minimum, all private stormwater facilities shall be inspected annually and maintained in proper condition consistent with the performance goals for which they were originally designed and as executed in the stormwater facilities maintenance agreement.
- B. The party who is permanently responsible for maintenance of the structural and nonstructural measures.
- C. Pass responsibilities for such maintenance to successors in title.
- D. Allow the City and its representatives the right of entry for the purposes of inspecting all permanent stormwater management systems.
- E. Allow the City the right to repair and maintain the facility, if necessary maintenance is not performed after proper and reasonable notice to the responsible party of the permanent stormwater management system.
- F. The agreement shall also stipulate that if site configuration or structural stormwater BMPs change, causing decreased structural stormwater BMP effectiveness, new or improved BMPs shall be installed.
- G. Access to all stormwater facilities must be inspected annually and maintained as necessary. The applicant shall obtain all

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

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

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

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

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

Section 12.13 Stormwater and Urban Runoff Pollution Control.

Subd. 1. Illegal Disposal

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

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

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

Subd. 2. Illicit Discharges and Connection.

- A. No person shall throw, drain, or otherwise discharge, cause, or allow others under its control to throw, drain, or otherwise discharge any pollutants or waters containing pollutants, other than stormwater to the municipal storm water system. The following discharges are exempt from discharge prohibitions established by this ordinance:
1. Water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water;
 2. Discharges or flow from firefighting, and other discharges authorized by the City in writing that are necessary to protect public health and safety;
 3. Discharges associated with dye testing, however this activity requires verbal notification to the City prior to the time of the test;
 4. The prohibition shall not apply to any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and further provided that written approval has been granted for any discharges to the storm drain system.
- B. No person shall use any illicit connection to intentionally convey non-storm water to the municipal storm water system.
1. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under the law or practices applicable or prevailing at the time of the connection.
 2. A person is considered to be in violation of this chapter if the person connects a line conveying sewage to the storm drain system, or allows such connection to continue.
- C. The City shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance.

1. The owner or party responsible shall allow the City ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under the conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by state and federal law. Any temporary or permanent obstruction to safe and easy access to the area to be inspected or sampled shall be promptly removed by the discharger at the request of the City and shall not be replaced.
 2. If the enforcement officer has been refused access to any part of the premises from which the nuisance is occurring, and the enforcement officer is able to demonstrate probable cause to believe that there may be a violation of this section, or that there is a need to inspect, test, examine or sample as part of a routine program designed to verify compliance with this section or any order issued hereunder, or to protect the overall public health, safety and welfare of the community, then the City may seek issuance of an administrative search warrant from any court of competent jurisdiction.
 3. The City may require the discharger to install monitoring equipment or other such devices as are necessary in the opinion of the City to conduct monitoring or sampling of the premises stormwater discharge. The monitoring equipment must be maintained by the discharger in a safe and proper operating condition at all times. All devices used to measure stormwater flow and quality must be calibrated to ensure their accuracy.
- D. Upon finding that a person has violated a prohibition of this section, the City may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:
1. The performance of monitoring, analysis, and reporting;
 2. The elimination of illicit connections or illicit discharges;
 3. The violating discharges, practices, or operations must cease and desist;
 4. The abatement or remediation of stormwater pollution or contamination of hazards and the restoration of any affected premises;
 5. Payment of a fine to cover administrative and remediation costs; and
 6. The implementation of source control or treatment BMPs.

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

- A. No person shall leave, deposit, discharge, dump, or otherwise expose any chemical or septic waste in an area where discharge to streets or storm drain system may occur. This section shall apply to both actual and potential discharges.
- B. For pools, water should be allowed to sit seven days to allow for chlorine to evaporate before discharge. If fungicides have been used, water must be tested and approved for discharge to the wastewater treatment plant.
- C. Runoff of water from residential property shall be minimized to the maximum extent practicable. Runoff of water from the washing down of paved areas in commercial or industrial property is prohibited unless necessary for health or safety purposes and not in violation of any other provisions in City codes.
- D. Every person owning or occupying premises through which a watercourse passes, shall keep and maintain that part of the watercourse within the premises free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or occupant shall maintain existing privately owned structures within or adjacent to a watercourse so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Subd. 4. Storage of Materials, Machinery, and Equipment.

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

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

- A. All motor vehicle parking lots shall be swept, at a minimum of twice a year to remove debris. Such debris shall be collected and disposed of properly. However, parking lots are not required to be swept for one month following a day on which precipitation of one-half inch or more occurs.
- B. Fuel and chemical residue or other types of potentially harmful material, such as animal waste, garbage or batteries, which is located in an area susceptible to runoff, shall be removed as soon as possible and disposed of properly.

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

Subd. 6. Notification of Spills.

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

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

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

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

Section 12.17 Penalties.

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

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

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

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

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

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

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

YES: BATESOLE, KUHLMAN, OSTERBERG, JENSEN

NO: NONE

ABSENT: BENSON

/S/ Todd Jensen, President Pro Tempore

ATTEST: _____
/S/ Martin D. Schultz, City Administrator

ORDINANCE NO. 622
2ND SERIES

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

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

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

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

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

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

Section 10.32. Erosion and Sediment Control

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

b. Additions or modifications to existing single family structures which

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

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

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

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

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

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

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

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

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

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

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

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

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

Subd. 4. Erosion and Sediment Control Plan.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

YES: BIGGER, CARLSON, WEISEL, BENSON, FRANK

NO: NONE

ABSENT: NONE

/S/ H. Dan Ness, Mayor

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