

Metropolitan Council
Mears Park Centre, 230 East Fifth Street, St. Paul, Minnesota 55101

For More Information, contact:

Jack Frost, Watershed Coordinator, Minnesota River Basin, (651) 602-1078
jack.frost@metc.state.mn.us

Judy Sventek, Watershed Coordinator, Mississippi River Basin, (651) 602-1156
judy.sventek@metc.state.mn.us

Tori Boers, Watershed Coordinator, St. Croix River Basin, (651) 602-1621
tori.boers@metc.state.mn.us

MODEL STORM WATER MANAGEMENT ORDINANCE

The model storm water management ordinance should assist communities in the Twin Cities metropolitan area in implementing the Metropolitan Council's Interim Strategy to Reduce Nonpoint Source Pollution to All Metropolitan Water Bodies. The Council adopted the strategy for the Minnesota River Basin, effective September 30, 1992, and for the remainder of the metropolitan area effective January 1, 1993. The strategy includes three essential requirements. These requirements are important components to addressing the water quality problems caused by nonpoint source pollution in the metropolitan area.

The first requirement is that local governments throughout the metropolitan area must adopt design standards for new storm water ponds that will reduce the contaminant loadings from surface water runoff. One set of design criteria that is widely accepted is from the Nationwide Urban Runoff Program (NURP). The second requirement is that local governments in the metropolitan area must also follow the urban "best management practices" as outlined in Protecting Water Quality in Urban Areas, published by the Minnesota Pollution Control Agency, or an equivalent set of standards. Sections 8.1 through 8.16 of the model ordinance detail suggested design criteria and best management practices. These sections form the heart of the ordinance. The remaining sections of the model ordinance are not as critical. The remaining sections essentially establish a process for the implementation of the design criteria and best management practices.

The third requirement is that all local governments in the metropolitan area must adopt the Minnesota Department of Natural Resources' shoreland regulations as required by the Department's priority timeline. These regulations are found in Statewide Standards For Management of Shoreland Areas published by the Minnesota Department of Natural Resources. The Minnesota Department of Natural Resources has established a timeline and format for the adoption of the shoreland regulations. The model ordinance does not address the shoreland regulations. Local governments should work with the

Minnesota Department of Natural Resources to determine the most effective way to implement the shoreland regulations.

The model ordinance is intended to be a resource for communities to use in adopting official controls which are consistent with design standards for new storm water ponds which will reduce the contaminant loadings from surface water runoff and which are consistent with the "best management practices" for land development with respect to storm water runoff. The ordinance provides a comprehensive approach to addressing the issue of storm water runoff.

It is impossible to draft a model ordinance to fit perfectly into all of the innumerable varieties of regulatory programs that exist at the local government level. The ordinance is designed to be adapted to the unique characteristics of each local government organization. The ordinance could be combined with or replace existing ordinances, such as erosion control ordinances, which address issues covered by the model ordinance. It is presumed that some provisions of the ordinance will be modified or possibly even rejected altogether. Other provisions may have to be added. The ordinance can be used as a "checklist" by local governments to analyze the adequacy of existing controls. If a local government determines that a major element, such as inspection and maintenance, is missing from existing controls, that section could be taken from the model ordinance and added to existing controls.

The ordinance requires that every applicant for a building permit, subdivision approval, or for any permit which would allow any change of the land surface including removing vegetative cover, excavating, filling, grading, and the construction of any structure prepare a storm water management plan. Structures are defined as 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. There are limited exemptions to the ordinance.

Storm water management plans must include detailed information regarding the existing conditions of the site and immediately adjacent areas, a construction plan outlining storm water management practices during construction and a plan of the final site conditions. The storm water management plans must meet certain standards detailing construction practices which control runoff and design standards for the construction, use, and maintenance of storm water management facilities.

The ordinance also includes regulations with respect to the use of lawn fertilizer.

ORDINANCE NO. _____

STORM WATER MANAGEMENT ORDINANCE

AN ORDINANCE PROMOTING THE HEALTH, SAFETY AND GENERAL WELFARE OF THE CITIZENS OF _____ MINNESOTA, BY AMENDING THE ZONING ORDINANCE, ADOPTING NEW SECTIONS REQUIRING STORM WATER MANAGEMENT PRACTICES.

1. STATUTORY AUTHORIZATION

This ordinance is adopted pursuant to Minnesota Statutes Section [462.351 for cities and towns, 394.21 for counties having a population of less than 300,000 according to the 1950 federal census] (1990).

2. FINDINGS

The [City, County, Town] of _____ hereby finds that uncontrolled and inadequately planned use of wetlands, woodlands, natural habitat areas, areas subject to soil erosion and areas containing restrictive soils adversely affects the public health, safety and general welfare by impacting water quality and contributing to other environmental problems, creating nuisances, impairing other beneficial uses of environmental resources and hindering the ability of the [City, County, Town] of _____ to provide adequate water, sewage, flood control, and other community services. In addition, extraordinary public expenditures may be required for the protection of persons and property in such areas and in areas which may be affected by unplanned land usage.

3. PURPOSE

The purpose of this ordinance is to promote, preserve and enhance the natural resources within the [City, County, Town] of _____ and protect them from adverse effects occasioned by poorly sited development or incompatible activities by regulating land disturbing or development activities that would have an adverse and potentially irreversible impact on water quality and unique and fragile environmentally sensitive land; by minimizing conflicts and encouraging compatibility between land disturbing and development activities and water quality and environmentally sensitive lands; and by requiring detailed review standards and procedures for land disturbing or development activities proposed for such areas, thereby achieving a balance between urban growth and development and protection of water quality and natural areas.

4. DEFINITIONS

For the purposes of this ordinance, the following terms, phrases, words, and their derivatives shall have the meaning stated below. When not inconsistent with the context, words used in the present tense include the future tense, words in the plural number include the singular number, and words in the singular number include the plural number. The word "shall" is always mandatory and not merely directive.

- 4.1 Applicant. Any person who wishes to obtain a building permit, zoning or subdivision approval.
- 4.2 Control measure. A practice or combination of practices to control erosion and attendant pollution.
- 4.3 Detention facility. A permanent natural or man-made structure, including wetlands, for the temporary storage of runoff which contains a permanent pool of water.
- 4.4 Flood fringe. The portion of the floodplain outside of the floodway.
- 4.5 Floodplain. The areas adjoining a watercourse or water basin that have been or may be covered by a regional flood.
- 4.6 Floodway. The channel of the watercourse, the bed of water basins, and those portions of the adjoining floodplains that are reasonably required to carry and discharge floodwater and provide water storage during a regional flood.
- 4.7 Hydric soils. Soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.
- 4.8 Hydrophytic vegetation. Macrophytic 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.
- 4.9 Land disturbing or development activities. Any change of the land surface including removing vegetative cover, excavating, filling, grading, and the construction of any structure.
- 4.10 Person. Any individual, firm, corporation, partnership, franchise, association, or governmental entity.
- 4.11 Public waters. Waters of the state as defined in Minnesota Statutes, section 103G.005, subdivision 15.
- 4.12 Regional flood. A flood that is representative of large floods known to have occurred generally in the state and reasonably characteristic of what can be expected to occur on an average frequency in the magnitude of a 100-year recurrence interval.
- 4.13 Retention facility. A permanent natural or man made structure that provides for the storage of storm water runoff by means of a permanent pool of water.
- 4.14 Sediment. Solid matter carried by water, sewage, or other liquids.

- 4.15 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.
- 4.16 Wetlands. Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this definition, wetlands must have the following three attributes:
- a) Have a predominance of hydric soils;
 - b) Are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and
 - c) Under normal circumstances support a prevalence of such vegetation.

[COMMENTARY: Many of the above definitions are derived from state law. A local government should insure that the definitions are also consistent with definitions in the local zoning code.]

5. SCOPE AND EFFECT

- 5.1 Applicability. Every applicant for a building permit, subdivision approval, or a permit to allow land disturbing activities must submit a storm water management plan to the [planning department, department of community development, zoning administrator. No building permit, subdivision approval, or permit to allow land disturbing activities shall be issued until approval of the storm water management plan or a waiver of the approval requirement has been obtained in strict conformance with the provisions of this ordinance. The provisions of section 9 of this ordinance apply to all land, public or private, located within the [City, Town, County] of _____.
- 5.2 Exemptions. The provisions of this ordinance do not apply to:
- a) Any part of a subdivision if a plat for the subdivision has been approved by the [City Council, County Board, Town Board] on or before the effective date of this ordinance;
 - b) Any land disturbing activity for which plans have been approved by the watershed management organization within six months prior to the effective date of this, ordinance;
 - c) A lot for which a building permit has been approved on or before the effective date of this ordinance;
 - d) Installation of fence, sign, telephone, and electric poles and other kinds of posts or poles; or
 - e) Emergency work to protect life, limb, or property.
- 5.3 Waiver. The [City Council, Town Board, County Board], upon recommendation of the Planning Commission, may waive any requirement of this ordinance upon making a

finding that compliance with the requirement will involve an unnecessary hardship and the waiver of such requirement will not adversely affect the standards and requirements set forth in Section 6. The [City Council, Town Board, County Board] 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.

6. STORM WATER MANAGEMENT PLAN APPROVAL PROCEDURES

- 6.1 Application. A written application for storm water management plan approval, along with the proposed storm water management plan, shall be filed with the [planning department, department of community development, zoning administrator] and shall include a statement indicating the grounds upon which the approval is requested, that the proposed use is permitted by right or as an exception in the underlying zoning district, and adequate evidence showing that the proposed use will conform to the standards set forth in this ordinance. Prior to applying for approval of a storm water management plan, an applicant may have the storm water management plans reviewed by the appropriate departments of the [city, town, county].

Two sets of clearly legible blue or black lined copies of drawings and required information shall be submitted to the [planning department, department of community development, zoning administrator] and shall be accompanied by a receipt from the _____ [governmental unit's chief financial officer] evidencing the payment of all required fees for processing and approval as set forth in Section 7.5, and a bond when required by Section 7.4 in the amount to be calculated in accordance with that section. 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 100 feet.

- 6.2 Storm water management plan. At a minimum, the storm water management plan shall contain the following information.

- a) Existing site map. A map of existing site conditions showing the site and immediately adjacent areas, including:
- 1) The name and address of the applicant, the section, township and range, north point, date and scale of drawing and number of sheets;
 - 2) Location of the tract by an insert map at a scale sufficient to clearly identify the location of the property and giving such information as the names and numbers of adjoining roads, railroads, utilities, subdivisions, towns and districts or other landmarks;
 - 3) Existing topography with a contour interval appropriate to the topography of the land but in no case having a contour interval greater than 2 feet;
 - 4) A delineation of all streams, rivers, public waters and wetlands located on and immediately adjacent to the site, including depth of water, a description of all vegetation which may be found in the water, a statement of general water quality and any classification given to the water body

or wetland by the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, and/or the United States Army Corps of Engineers;

- 5) Location and dimensions of existing storm water drainage systems and natural drainage patterns on and immediately adjacent to the site delineating in which direction and at what rate storm water is conveyed from the site, identifying the receiving stream, river, public water, or wetland, and setting forth those areas of the unaltered site where storm water collects;
 - 6) A description of the soils of the site, including a map indicating soil types of areas to be disturbed as well as a soil report containing information on the suitability of the soils for the type of development proposed and for the type of sewage disposal proposed and describing any remedial steps to be taken by the developer to render the soils suitable;
 - 7) Vegetative cover and clearly delineating any vegetation proposed for removal; and
 - 8) 100-year floodplains, flood fringes and floodways.
- b) Site construction plan. A site construction plan including:
- 1) Locations and dimensions of all proposed land disturbing activities and any phasing of those activities;
 - 2) Locations and dimensions of all temporary soil or dirt stockpiles;
 - 3) Locations and dimensions of all construction site erosion control measures necessary to meet the requirements of this ordinance;
 - 4) Schedule of anticipated starting and completion date of each land disturbing activity including the installation of construction site erosion control measures needed to meet the requirements of this ordinance; and
 - 5) Provisions for maintenance of the construction site erosion control measures during construction.
- c) Plan of final site conditions. A plan of final site conditions on the same scale as the existing site map showing the site changes including:
- 1) Finished grading shown at contours at the same interval as provided above or as required to clearly indicate the relationship of proposed changes to existing topography and remaining features;

- 2) A landscape plan, drawn to an appropriate scale, including dimensions and distances and the location, type, size and description of all proposed landscape materials which will be added to the site as part of the development;
- 3) A drainage plan of the developed site delineating in which direction and at what rate storm water will be conveyed from the site and setting forth the areas of the site where storm water will be allowed to collect;
- 4) The proposed size, alignment and intended use of any structures to be erected on the site;
- 5) A clear delineation and tabulation of all areas which shall be paved or surfaced, including a description of the surfacing material to be used; and
- 6) Any other information pertinent to the particular project which in the opinion of the applicant is necessary for the review of the project.

7. PLAN REVIEW PROCEDURE

7.1 Process. Storm water management plans meeting the requirements of Section 6 shall be submitted by the [planning department, department of community development, zoning administrator] to the Planning Commission for review in accordance with the standards of Section 8. The Commission shall recommend approval, recommend approval with conditions, or recommend denial of the storm water management plan. Following Planning Commission action, the storm water management plan shall be submitted to the [City Council, Town Board, County Board] at its next available meeting. [City Council, Town Board, County Board] action on the storm water management plan must be accomplished within 120 days following the date the application for approval is filed with the [planning department, department of community development, zoning administrator].

[COMMENTARY: The process outlined in Section 71 can be modified to be consistent with the regulatory process of the particular local government unit. For example one local government may have a particular department which reviews land use regulatory matters except the final decision to approve or deny a land use plan or permit which is reserved for the governing body of the local government unit. Another local governmental unit may provide the department which reviews land use regulatory matters with full authority to take final action on the application. Other local governments may use a hybrid process where some permits are acted upon by the appropriate regulatory department while other land use matters are left to the governing body for final approval.]

7.2 Duration. Approval of a plan submitted under the provisions of this ordinance shall expire one year after the date of approval unless construction has commenced in accordance with the plan. However, if prior to the expiration of the approval, the applicant makes a written request to the [planning department, department of community development, zoning administrator] for an extension of time to commence construction setting forth the reasons for the requested extension, the planning department may grant

one extension of not greater than one single year. Receipt of any request for an extension shall be acknowledged by the [planning department, department of community development, zoning administrator] within 15 days. The [planning department, department of community development, zoning administrator] shall make a decision on the extension within 30 days of receipt. Any plan may be revised in the same manner as originally approved.

- 7.3 Conditions. A storm water management plan may be approved subject to compliance with conditions reasonable and necessary to insure that the requirements contained in this ordinance are met. Such conditions may, among other matters, limit the size, kind or character of the proposed development, require the construction of structures, drainage facilities, storage basins and other facilities, require replacement of vegetation, establish required monitoring procedures, stage the work over time, require alteration of the site design to insure buffering, and require the conveyance to the [City, Town, County] of _____ or other public entity of certain lands or interests therein.
- 7.4 Performance bond. Prior to approval of any storm water management plan, the applicant shall submit an agreement to construct such required physical improvements, to dedicate property or easements, or to comply with such conditions as may have been agreed to. Such agreement shall be accompanied by a bond to cover the amount of the established cost of complying with the agreement. The agreement and bond shall guarantee completion and compliance with conditions within a specific time, which time may be extended in accordance with Section 7.2.

The adequacy, conditions and acceptability of any agreement and bond shall be determined by the _____ [City Council, Town Board, County Board] or any official of the [City, Town, County] of _____ as may be designated by resolution of the _____ [City Council, Town Board, County Board].

- 7.5 Fees. All applications for storm water management plan approval shall be accompanied by a processing and approval fee of \$_____.

8. APPROVAL STANDARDS

- 8.1 No storm water management plan which fails to meet the standards contained in this section shall be approved by the [City Council, Town Board, County Board].

[COMMENTARY: Sections 8.2 through 8.16 are an example of how best management for handling storm water runoff and design criteria for detention ponds can be included within an ordinance Additional best management practices and design criteria can be found in the MPCA publication "Protecting Water Quality in Urban Areas."]

- 8.2 Site dewatering. Water pumped from the site shall be treated by temporary sedimentation basins, grit chambers, sand filters, upflow chambers, hydro-cyclones, swirl concentrators or other appropriate controls as appropriate. Water may not be discharged in a manner that causes erosion or flooding of the site or receiving channels or a wetland.
- 8.3 Waste and material disposal. All waste and unused building materials (including garbage, debris, cleaning wastes, wastewater, toxic materials or hazardous materials) shall be properly disposed of off-site and not allowed to be carried by runoff into a receiving channel or storm sewer system.

- 8.4 Tracking. Each site shall have graveled roads, access drives and parking areas of sufficient width and length to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by street cleaning (not flushing) before the end of each workday.
- 8.5 Drain inlet protection. All storm drain inlets shall be protected during construction until control measures are in place with a straw bale, silt fence or equivalent barrier meeting accepted design criteria, standards and specifications contained in the MPCA publication "Protecting Water Quality in Urban Areas."
- 8.6 Site erosion control. The following criteria (a. through d.) apply only to construction activities that result in runoff leaving the site.
- a) Channelized runoff from adjacent areas passing through the site shall be diverted around disturbed areas, if practical. Otherwise, the channel shall be protected as described below. Sheetflow runoff from adjacent areas greater than 10,000 square feet in area shall also be diverted around disturbed areas, unless shown to have resultant runoff rates of less than 0.5 ft./sec. across the disturbed area for the one year storm. Diverted runoff shall be conveyed in a manner that will not erode the conveyance and receiving channels.
 - b) All activities on the site shall be conducted in a logical sequence to minimize the area of bare soil exposed at any one time.
 - c) Runoff from the entire disturbed area on the site shall be controlled by meeting either subsections 1 and 2 or 1 and 3.
 - 1) All disturbed ground left inactive for fourteen or more days shall be stabilized by seeding or sodding (only available prior to September 15) or by mulching or covering or other equivalent control measure.
 - 2) For sites with more than ten acres disturbed at one time, or if a channel originates in the disturbed area, one or more temporary or permanent sedimentation basins shall be constructed. Each sedimentation basin shall have a surface area of at least one percent of the area draining to the basin and at least three feet of depth and constructed in accordance with accepted design specifications. Sediment shall be removed to maintain a depth of three feet. The basin discharge rate shall also be sufficiently low as to not cause erosion along the discharge channel or the receiving water.
 - 3) For sites with less than ten acres disturbed at one time, silt fences, straw bales, or equivalent control measures shall be placed along all sideslope and downslope sides of the site. If a channel or area of concentrated runoff passes through the site, silt fences shall be placed along the channel edges to reduce sediment reaching the channel. The use of silt fences, straw bales, or equivalent control measures must include a maintenance and inspection schedule.
 - d) Any soil or dirt storage piles containing more than ten cubic yards of material should not be located with a downslope drainage length

of less than 25 feet from the toe of the pile to a roadway or drainage channel. If remaining for more than seven days, they shall be stabilized by mulching, vegetative cover, tarps, or other means. Erosion from piles which will be in existence for less than seven days shall be controlled by placing straw bales or silt fence barriers around the pile. In-street utility repair or construction soil or dirt storage piles located closer than 25 feet of a roadway or drainage channel must be covered with tarps or suitable alternative control, if exposed for more than seven days, and the storm drain inlets must be protected with straw bale or other appropriate filtering barriers.

8.7 Storm water management criteria for permanent facilities

- a) An applicant shall install or construct, on or for the proposed land disturbing or development activity, all storm water management facilities necessary to manage increased runoff so that the two-year, ten-year, and 100-year storm peak discharge rates existing before the proposed development shall not be increased and accelerated channel erosion will not occur as a result of the proposed land disturbing or development activity. An applicant may also make an in-kind or monetary contribution to the development and maintenance of community storm water management facilities designed to serve multiple land disturbing and development activities undertaken by one or more persons, including the applicant.
- b) The applicant shall give consideration to reducing the need for storm water management 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 flow of water without compromising the integrity or quality of the wetland or pond.
- c) The following storm water management practices shall be investigated in developing a storm water management plan in the following descending order of preference:
 - 1) Natural infiltration of precipitation on-site;

[COMMENTARY: The purpose of this provision is to encourage the development of a storm water management plan that encourages natural infiltration. This includes providing as much natural or vegetated areas on the site as possible, minimizing impervious surfaces, and directing runoff to vegetated areas rather than to adjoining streets, storm sewers and ditches.]

- 2) Flow attenuation by use of open vegetated swales and natural depressions;
- 3) Storm water retention facilities; and
- 4) Storm water detention facilities.

- d) A combination of successive practices may be used to achieve the applicable minimum control requirements specified in subsection (a) above. Justification shall be provided by the applicant for the method selected.

8.8 Design standards. Storm water detention facilities constructed in the [City, Town, County] of _____ shall be designed according to the most current technology as reflected in the MPCA publication "Protecting Water Quality in Urban Areas", and shall contain, at a minimum, the following design factors:

- a) A permanent pond surface area equal to two percent of the impervious area draining to the pond or one percent of the entire area draining to the pond, whichever amount is greater;
- b) An average permanent pool depth of four to ten feet;

[COMMENTARY: An alternative to subsections (a) and (b) would be to require that the volume of the permanent pool be equal to or greater than the runoff from a 2.0-inch rainfall for the fully developed site.]

- c) A permanent pool length – to – width ratio of 3:1 or greater;
- d) A minimum protective shelf extending ten feet into the permanent pool with a slope of 10:1, beyond which slopes should not exceed 3:1;
- e) A protective buffer strip of vegetation surrounding the permanent pool at a minimum width of one rod (16.5 feet) *[this width is consistent with the draft rules developed by the Board of Water and Soil Resources under the Wetland Conservation Act of 1991]*;
- f) All storm water detention facilities shall have a device to keep oil, grease, and other floatable material from moving downstream as a result of normal operations;
- g) Storm water detention facilities for new development must be sufficient to limit peak flows in each subwatershed to those that existed before the development for the 10 year storm event. All calculations and hydrologic models/information used in determining peak flows shall be submitted along with the storm water management plan;
- h) All storm water detention facilities must have a forebay to remove coarse-grained particles prior to discharge into a watercourse or storage basin.

8.9 Wetlands.

- a) Runoff shall not be discharged directly into wetlands without presettlement of the runoff.
- b) A protective buffer strip of natural vegetation at least one rod (16.5 feet) in width shall surround all wetlands. *[This width is consistent with the draft rules developed by the Board of Water and Soil Resources under the Wetland Conservation Act of 1991.]*
- c) Wetlands must not be drained or filled, wholly or partially, unless replaced by restoring or creating wetland areas of at least equal public value. Replacement must be guided by the following principles in descending order of priority.
 - 1) Avoiding the direct or indirect impact of the activity that may destroy or diminish the wetland;
 - 2) Minimizing the impact by limiting the degree or magnitude of the wetland activity and its implementation;
 - 3) Rectifying the impact by repairing, rehabilitating, or restoring the affected wetland environment;
 - 4) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the activity, and
 - 5) Compensating for the impact by replacing or providing substitute wetland resources or environments.
[Compensation, including the replacement ratio and quality of replacement should be consistent with the requirements outlined in the rules which will be adopted by the Board of Water and Soil Resources to implement the Wetland Conservation Act of 1991.]

8.10 Steep slopes. No land disturbing or development activities shall be allowed on slopes of 18 per cent or more.

8.11 Catch basins. All newly installed and rehabilitated catch basins shall be provided with a sump area for the collection of coarse-grained material. Such basins shall be cleaned when they are half filled with material.

8.12 Drain leaders. All newly constructed and reconstructed buildings will route drain leaders to pervious areas wherein the runoff can be allowed to infiltrate. The flow rate of water exiting the leaders shall be controlled so no erosion occurs in the pervious areas.

8.13 Inspection and maintenance. All storm water management facilities shall be designed to minimize the need of maintenance, to provide access for maintenance purposes and to be structurally sound. All storm water management facilities shall have a plan of operation and maintenance that assures continued effective removal of pollutants carried in storm water runoff. The director of public works, or designated representative, shall inspect all storm water management facilities during construction, during the first year of operation, and at least once every five years thereafter. The inspection records will be kept on file at

the public works department for a period of 6 years. It shall be the responsibility of the applicant to obtain any necessary easements or other property interests to allow access to the storm water management facilities for inspection and maintenance purposes.

- 8.14 Models/methodologies/computations. Hydrologic models and design methodologies used for the determination of runoff and analysis of storm water management structures shall be approved by the director of public works. Plans, specification and computations for storm water management facilities submitted for review shall be sealed and signed by a registered professional engineer. All computations shall appear on the plans submitted for review, unless otherwise approved by the director of public works.
- 8.15 Watershed management plans/Groundwater management plans. Storm water management plans shall be consistent with adopted watershed management plans and groundwater management plans prepared in accordance with Minnesota Statutes section 103B.231 and 103B.255 respectively, and as approved by the Minnesota Board of Water and Soil Resources in accordance with state law.
- 8.16 Easements. If a storm water management plan involves direction of some or all runoff off of the site, it shall be the responsibility of the applicant to obtain from adjacent property owners any necessary easements or other property interests concerning flowage of water.

9. LAWN FERTILIZER REGULATIONS

- 9.1 Use of impervious surfaces. No person shall apply fertilizer to or deposit grass clippings, leaves, or other vegetative materials on impervious surfaces, or within storm water drainage systems, natural drainage ways, or within wetland buffer areas.
- 9.2 Unimproved land area. Except for driveways, sidewalks, patios, areas occupied by structures or areas which have been improved by landscaping, all areas shall be covered by plants or vegetative growth.
- 9.3 Fertilizer content. Except for the first growing season for newly established turf areas, no person shall apply liquid fertilizer which contains more than one-half percent by weight of phosphorus, or granular fertilizer which contains more than three percent by weight of phosphorus, unless the single application is less than or equal to one-tenth pound of phosphorus per one thousand square feet. Annual application amount shall not exceed one half pound of phosphorus per one thousand square feet of lawn area.
- 9.4 Buffer zone. Fertilizer applications shall not be made within one rod (16.5 feet) of any wetland or water resource. *[This distance is consistent with the draft rules developed by the Board of Water and Soil Resources under the Wetland Conservation Act of 1991.]*

10. PENALTY

Any person, firm or corporation violating any provision of this ordinance shall be fined not less than five dollars nor more than five hundred dollars for each offense, and a separate offense shall be deemed committed on each day during or on which a violation occurs or continues.

11. OTHER CONTROLS

In the event of any conflict between the provisions of this ordinance and the provisions of an erosion control or shoreland protection ordinance adopted by the [City Council, Town Board, County Board], the more restrictive standard prevails.

12. SEVERABILITY

The provisions of this ordinance are severable. If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of this ordinance which can be given effect without the invalid provision or application

13. EFFECTIVE DATE

This ordinance shall be effective the _____ day of _____ 199__.

BIBLIOGRAPHY FOR MODEL STORM WATER MANAGEMENT ORDINANCE

Minnesota Pollution Control Agency, Division of Water Quality, Protecting Water Quality in Urban Areas: Best Management Practices for Minnesota (1989).

Wisconsin Department of Natural Resources, "Model Construction Site Erosion Control Ordinance," Wisconsin Construction Site Best Management Practice Handbook (1987).

Metropolitan Council, Environmental Protection: Model Ordinances Used by Local Governments (1977).

Matthews, Municipal Ordinances, 52.09, 52. 10 (Cumulative Supplement, 2d Ed.).