

SECTION 33: STORMWATER MANAGEMENT

Subdivision 1: PURPOSE

The purpose of this section is to prevent or reduce, to the most practicable extent, the negative effects of stormwater runoff and to protect the water and soil resources of the City through the use of best management practices and/or stormwater management facilities.

Subdivision 2(a): STORMWATER MANAGEMENT PLAN REQUIRED

A Stormwater Management Plan is required for every applicant for any subdivision approval, PUD approval, building permit, or commercial, multiple family residential or industrial land use permit, unless exempted in Subdivision 2(b).

Subdivision 2(b): EXEMPTION FROM STORMWATER MANAGEMENT PLAN REQUIREMENT

A Stormwater Management Plan is not required for:

- A. Any part of a platted subdivision approved by the City on or before the effective date of this Ordinance;
- B. A lot for which all land use permits has been approved on or before the effective date of this Ordinance.
- C. Installation of a fence, sign, telephone and electric poles and other kinds of posts or poles.
- D. Emergency work to protect life, limb or property.
- E. A subdivision resulting in less than three lots or outlots, unless any part of it is in the shoreland district.
- F. A residential use in a residential or agricultural zone, but not in the shoreland district, on a lot of record created on or before the effective date of this Ordinance, if the proposed use meets impervious surface requirements, and will result in a cumulative addition of less than 10,000 square feet of impervious surface.
- G. A permitted or conditional residential use on a lot that was created by a subdivision which has an approved Stormwater Management Plan.
- H. An applicant is seeking a building permit limited to electrical, plumbing, window replacement, residing, or reroofing, and the impervious surface will not be increased.

The Zoning Administrator may require any development activity that it determines may significantly increase downstream runoff rates or volumes, flooding, soil erosion, water pollution or property damage or significantly impact a lake, stream, river or wetland to obtain a Stormwater Management Plan.

Subdivision 2(c): WAIVER OF STORMWATER MANAGEMENT PLAN REQUIREMENTS

The City, 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 herein. The City may require, as a condition of the waiver, such dedication or construction, or agreement to dedicate or construct physical improvements, facilities, property and/or easements as may be necessary to adequately meet said standards and requirements.

Subdivision 3: APPLICATION FOR STORMWATER MANAGEMENT PLAN

- A. A written application for Stormwater Management Plan shall be filed with the City Administrator prior to any work proceeding, and shall include:
 - 1. A statement indicating the grounds upon which the approval is requested;
 - 2. Name, address, and telephone number for the property owner and the applicant, if different;
 - 3. Address, Parcel Identification Number and Legal Description of the property;
 - 4. A site map of the property as it exists, as set forth in Subdivision 6(a);
 - 5. A site construction plan, as set forth in Subdivision 6(b);
 - 6. A drawing of the final site conditions, as set forth in Subdivision 6(c);
 - 7. Receipt evidencing payment of fees (if applicable), and;
 - 8. Documentation for the sufficient financial security, if required, as set forth in Subdivision 5(c).

- B. An application shall also include a statement indicating:
 - 1. The applicant will be responsible for the design and construction of

any stormwater management facilities or improvements proposed by the applicant or required as a condition of approval.

2. The applicant will be responsible for the maintenance and upkeep of all elements of any proposed stormwater management practice or stormwater management facilities or improvements proposed by the applicant or required as a condition of approval in perpetuity.
 3. The proposed use is permitted, or the applicant has received, or applied for, all permits and approvals required for the proposed use.
- C. Applicant must provide five sets of clearly legible blue or black lined copies of all drawings, maps or plans required. Drawings shall be prepared to a scale appropriate to the site of the project and suitable for the review to be performed.

Subdivision 4: TRANSFER OF STORMWATER MANAGEMENT PLAN

Except when properly transferred to a subsequent owner, all stormwater facilities or improvements proposed by the applicant, or required as a condition of approval, for meeting the requirements of this section, must be completed prior to any sale or transfer of the property. An approved Stormwater Management Plan may be transferred to a subsequent owner, upon the subsequent owner requesting transfer, assuming legal responsibility for complying with the terms and conditions of the original Stormwater Management Plan, and providing any financial security required. The Zoning Administrator may, include additional conditions or increase the financial security, in granting the transfer. No transfer will be required if all stormwater facilities or improvement, and all conditions, have been completed. The application for transfer need not be submitted to the Planning Commission or City Council.

Subdivision 5(a): ELIMINATION OF PUBLIC HEALTH OR SAFETY HAZARDS RELATING TO IMPROPERLY INSTALLED STORMWATER IMPROVEMENTS

The City may take action to install, or to correct or repair, an improvement required by this section. The cost of any such improvement or repair, including the costs of enforcement, including attorney and engineering fees, shall be charged to the property, and if not paid, may be assessed against the responsible property as a special charge pursuant to Minn. Stat. § 429.101, or other authority. Except in the event of an emergency to person or property which precludes judicial review, the City will gain access to the property by obtaining a summary abatement order as outlined in Minn. Stat. § 463.15-463.26.

Subdivision 5(b): INSPECTION

The City may inspect any property for compliance with the terms of this section, or the terms or conditions of a Stormwater Management Plan. If property owner fails or refuses to permit free access and entry to the property, or any part thereof, for an inspection, the City may, upon a showing that probable cause exists for the inspection, petition and obtain an order to inspect and/or search warrant from a court of competent jurisdiction.

Subdivision 5(c): FINANCIAL SECURITY REQUIRED

The Zoning Administrator may require a financial guarantee for any approval under this section in order to ensure stormwater management improvements, or related grading to treat or control stormwater, is performed as approved. The financial guarantee may be in the form of a letter of credit, cash deposit or bond in favor of the City equal to, up to 125% of all costs of all proposed stormwater management improvements, and related grading to treat or control stormwater and prevent negative erosion and sediment impacts. The form of the guarantee is at the City's option. Release of the financial guarantee is contingent on approval by the City Engineer that as-built conditions and erosion and sediment control measures meet specifications of the stormwater management plan.

Subdivision 6(a): EXISTING SITE MAP

- A. At a minimum, the existing site map must show existing conditions of the site and immediately adjacent areas, including:
1. The name and address of the applicant, the section, township and range, north point, date, and number of sheets;
 2. Location and dimensions of all impervious surfaces, including driveways and roadways;
 3. Location and dimensions of existing stormwater drainage systems and natural drainage patterns on and immediately adjacent to the site delineating in which direction stormwater is conveyed from the site, identifying the receiving stream, river, public water, or wetland, and setting forth those areas of the unaltered site where stormwater collects;
 4. An approximate delineation of all streams, rivers, public waters and wetlands located on and immediately adjacent to the site the classification given to the water body as provided in the Shoreland Overlay District;
 5. A general description of the soils of the site, as well as a statement containing information on the suitability of the soils for the type of

development proposed, and describing any remedial steps to be taken by the developer to render the soils suitable. Soils information can be obtained and printed in report format from Soil Data Mart website (<http://soildatamart.nrcs.usda.gov/>);

6. Location and dimensions of subsurface sewage treatment systems (SSTS);
 7. Vegetative cover and clearly delineating any vegetation proposed for removal; and
 8. Setbacks, easements and right-of-ways.
- B. Upon request by the City Engineer or Zoning Administrator, the existing site map must show the following:
1. Plan drawn to scale;
 2. 100-year flood plains, flood fringes, floodways, and shoreland areas;
 3. 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;
 4. Existing topography with a contour interval appropriate to the topography of the land but in no case having a contour interval greater than two (2) feet;
 5. An official 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 classification given to the water body or wetland pursuant to the Shoreland Ordinance, Stearns County, the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency or the US Army Corps of Engineers;
 6. Any hydrological measurements or related calculations for both on and off the site in accordance with Subdivision 11;
 7. 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 describing any remedial steps to be taken by the developer to render the soils suitable;

8. Certification by a licensed engineer;
9. Certification by a licensed surveyor; or
10. Any additional information necessary to evaluate the application.

Subdivision 6(b): SITE CONSTRUCTION PLAN

- A. At a minimum, the site construction plan for the proposed improvements or use must include:
 1. Locations and dimensions of all proposed land disturbing activities and any phasing of those activities;
 2. Locations and estimated 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;
 5. Provisions for maintenance of the construction site erosion control measures during construction;
 6. Work and materials list for all proposed site grading, stormwater management, and erosion and sediment control related operations;
 7. Provisions for protection (barricades, etc) of SSTS sites during construction to avoid accidental compaction,
- B. Upon request by the City Engineer or Zoning Administrator, the existing site map must show the following:
 1. Plan drawn to scale;
 2. Certification by a licensed engineer;
 3. Certification by a licensed surveyor; or
 4. Any additional information requested by the City Engineer or Zoning Administrator necessary to evaluate the application.

Subdivision 6(c): PLAN OF FINAL SITE CONDITIONS

- A. At a minimum, the plan of the final site conditions must be drawn on the same scale as the existing site map and show the site changes, including:
1. A drainage plan of the developed conditions delineating in which direction stormwater will be conveyed from the site and setting forth the areas of the site where stormwater will be allowed to collect (if applicable);
 2. The proposed size, alignment and intended use of any structures to be erected on the site;
 3. A clear delineation and tabulation of all impervious areas;
 4. 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; and
 5. Any additional information pertinent to the particular project, which in the opinion of the applicant is necessary for the review of the project.
- B. Upon request of the City Engineer or the Zoning Administrator, the plan of final site conditions must show the following:
1. Plan drawn to scale
 2. 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;
 3. Any hydrological measurements or related calculations for both on and off the site in accordance with Subdivision 11;
 4. Certification by a licensed engineer;
 5. Certification by a licensed surveyor; or
 6. Any additional information necessary to evaluate the application.

Subdivision 7: APPLICATION REVIEW PROCEDURE

- A. Process. Applications shall be submitted by the City Administrator who

shall consult with the City Engineer, for review, and shall be reviewed along with any associated site plan for the property, or as a site plan would be reviewed, if no site plan is required.

- B. Duration. Approval of a Stormwater Management Plan will expire one year after the date of approval unless construction has commenced in accordance with the Stormwater Management Plan. If all improvements proposed in the application, or required as a condition to approval, are not completed within two years, the Stormwater Management Plan will expire.
- C. An application may be approved subject to compliance with conditions reasonable and necessary to insure that the requirements contained in this Section 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 of Rockville or other public entity of certain lands or interests therein.
- D. A combination of conditions may be used to achieve the requirements of this Section.

Subdivision 8: STORMWATER MANAGEMENT STANDARDS – GENERALLY

All properties, regardless of whether a Stormwater Management Plan is required, must conform with the following standards:

- A. Development must be planned and conducted in a manner that will minimize the extent of disturbed areas, runoff velocities, erosion potential, and reduce and delay runoff volumes. Disturbed areas must be stabilized and protected as soon as possible and facilities or methods used to retain sediment on the site.
- B. Consideration shall be given to reducing the need for stormwater management facilities by incorporating the use of natural drainage ways, topography and land cover; such as wetlands, ponds, natural swales, depressions and vegetated soil surfaces as they exist before development to the degree that they can accommodate the additional flow of water without compromising the integrity of the natural features.
- C. When new stormwater management facilities are required, preference will be given to above ground conveyances and restoration or establishment of natural drainage ways, topography and land cover before discharge to public waters, when possible.

- D. When development density, topographic features, and soil and vegetation conditions are not sufficient to adequately handle stormwater runoff using natural features and vegetation, preference will be given to constructed facilities designed using surface drainage, vegetated filter strips, bioretention areas, rainwater gardens, enhanced swales, off-line retention areas, and natural depressions for infiltration rather than buried pipes and human-made materials and facilities.

- E. The following practices shall be investigated in developing a plan, in the following descending order of preference:
 - 1. Natural infiltration of precipitation on-site;
 - 2. Flow attenuation by use of open vegetated swales and/or natural depressions;
 - 3. Retention facilities; and
 - 4. Detention facilities.

- F. Stormwater facilities shall be designed assuming that existing drains, drain tiles and other inaccessible drainage facilities, whether natural or manmade, no longer function, unless:
 - 1. An easement is supplied to provide sufficient access for future maintenance;
 - 2. The applicant demonstrates that the drain or tile has the capacity and service condition to make it a suitable component of the stormwater management system;
 - 3. The City accepts the dedication of the easement, or a property owners association is established and assumes the maintenance of the components and the City approves of the transfer to the association.
 - 4. This Subdivision 8(F) may not be interpreted to require the City to accept dedication of any stormwater facility.

- G. Where there is discharge to an existing roadway, ditch, storm sewer or other public facility, the stormwater may not degrade or negatively impact the safety, maintenance or function of any such public facility.

- H. New constructed stormwater outfalls to any public water or wetland must provide for filtering or settling of suspended solids and skimming of surface debris before discharge.

Subdivision 9: CONSTRUCTION ACTIVITY STANDARDS – GENERALLY

All properties, regardless of whether a Stormwater Management Plan is required, must conform with the following standards:

- A. Site Erosion Control. The following criteria apply to construction activities that result in runoff on and/or leaving the site.
1. Channeled 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 ten thousand (10,000) square feet in area shall also be diverted around disturbed areas, if practical. Diverted runoff shall be conveyed in a manner that will not erode the conveyance and receiving channels.
 2. All activities on the site shall be conducted in a logical sequence to minimize the area of bare soil exposed at any one time.
 3. Runoff from the entire disturbed area on the site shall be controlled by meeting either Items (a) and (b) or (a) and (c).
 - (a) All disturbed ground left inactive for fourteen (14) or more days (seven (7) days for discharges within one (1) mile of and flow to Special Waters and Impaired Waters as defined by NPDES General Stormwater Permit for Construction Activity from the Minnesota Pollution Control Agency) shall be stabilized by seeding or sodding (only available prior to September 15), or by mulching or covering or other equivalent control measure.
 - (b) For sites with more than ten (10) acres disturbed at one time (five (5) acres for discharges within one (1) mile of and flow to Special Waters and Impaired Waters as defined by NPDES General Stormwater Permit for Construction Activity from the Minnesota Pollution Control Agency), 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 (1%) percent of the area draining to the basin and at least three (3) feet of depth and constructed in accordance with accepted design specifications. Sediment shall be removed within twenty four (24) hours of discovery to maintain a depth of three (3) feet. The basin discharge rate shall also be sufficiently low as to not cause erosion along the discharge channel or the receiving water.

- (c) For sites with less than ten (10) acres disturbed at one time (five (5) acres for discharges within one (1) mile of and flow to Special Waters and Impaired Waters as defined by NPDES General Stormwater Permit for Construction Activity from the Minnesota Pollution Control Agency), silt fences, biorolls, 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, biorolls, or equivalent control measures must include a maintenance and inspection schedule.
- 4. Any soil or dirt storage piles containing more than ten (10) cubic yards of material should not be located with a downslope drainage length of less than twenty-five (25) feet from the toe of the pile to a roadway or drainage channel. If remaining for more than fourteen (14) days (seven (7) days for discharges within one (1) mile of and flow to Special Waters and Impaired Waters as defined by NPDES General Stormwater Permit for Construction Activity from the Minnesota Pollution Control Agency), they shall be stabilized by mulching, vegetative cover, tarps, or other means. Erosion from piles which will be in existence for less than fourteen (14) days (seven (7) days for discharges within one (1) mile of and flow to Special Waters and Impaired Waters as defined by NPDES General Stormwater Permit for Construction Activity from the Minnesota Pollution Control Agency) shall be controlled by placing biorolls or silt fence barriers around the pile. In-street utility repair or construction soil or dirt storage piles located closer than twenty-five (25) feet of a roadway or drainage channel must be covered with tarps or suitable alternative control, if exposed for more than seven days.
- 5. “Stabilized” means
 - B. 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.
 - C. Waste and Material Disposal. All waste and unused building materials including but not limited to garbage, cleaning wastes, debris, 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 surface (storm) sewer system.

- D. Sediment 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.
- E. Drain Inlet Protection. All surface (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 Minnesota Pollution Control Agency publication "Protecting Water Quality in Urban Areas."
- F. Final Stabilization: Final stabilization requires that all soil disturbing activities at the site have been completed and all soils must be stabilized by a uniform perennial vegetative cover with a density of 70% over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions.

Subdivision 10: SPECIAL SHORELAND EROSION AND SEDIMENT CONTROL STANDARDS

Within the shoreland district, development activity that results in the disturbance of 10,000 square feet or more on general development lakes, recreational development lakes and all river/streams classes, and 5,000 square feet on natural environment lakes, special protection lakes, and sensitive area districts must meet the Pollution Control Agency General Stormwater Permit for Construction Activity requirements for Erosion Prevention and Sediment Control. These requirements must be incorporated into the project plans and specification.

Subdivision 11: DETENTION FACILITY DESIGN AND MAINTENANCE STANDARDS

All properties for which a Stormwater Management Plan is required must conform with the following standards:

- A. Design. Stormwater management facilities shall be designed according to the most current technology, and must comply with the design guidelines provided in the publications of the Minnesota Pollution Control Agency, "Protecting Water Quality in Urban Areas" (2000) and "Minnesota Stormwater Manual" (2005), as they may be amended. At a minimum, facilities and improvements must be constructed pursuant to the designs and specifications approved by the City Engineer including the following:
 - 1. Rainfall amounts for design storms can be found using the *U.S. Weather Bureau Technical Paper No. 40 (TS 40)* rainfall intensity

duration curves for Type II rainfall distribution.

2. Peak discharge rates shall be derived using the standard methods of the *Natural Resources Conservation Service TR 55* or *TR 20* as defined in the current *Hydrology Guide for Minnesota*.
 3. Sheet flow shall be limited to 100 feet for Time of Concentration calculations.
 4. The following runoff curve numbers based on hydrologic soil type shall be used to analyze existing conditions:
 - (a) A – 30
 - (b) B – 55
 - (c) C – 71
 - (d) D – 77
 5. Total volume discharges shall be derived using the standard methods of *Natural Resources Conservation Service TR 55* or *TR 20* as defined in the current *Hydrology Guide for Minnesota*.
 6. All wet detention and retention facilities shall be designed and constructed in accordance with the W.W.Walker Method (1987).
 7. For evaluation of post-development runoff, drained hydric soils shall be assumed to revert to an undrained condition unless the applicant demonstrates that publicly owned and maintained facilities will be adequate to maintain the drained condition.
 8. Stormwater management infiltration facilities shall be designed to infiltrate 0.5 inch of runoff from impervious surfaces (Water Quality Volume) within forty eight (48) hours.
 9. Infiltration volume and facility sizes shall be calculated using the appropriate hydrologic soil group calculation and saturation infiltration rates from the *Minnesota Stormwater Manual*.
 10. Infiltration facilities shall be designed and constructed in accordance with the *Minnesota Stormwater Manual*.
- B. Inspection and Maintenance. All stormwater management practices and facilities shall be designed to minimize the need of maintenance, to provide access for maintenance purposes and to be structurally sound. All stormwater management facilities shall have a plan of operation and maintenance that assures continued effective removal of pollutants carried in stormwater runoff. The director of public works, or designated representative, may inspect all stormwater management facilities during construction, during the first year of operation, and once every five (5)

years thereafter. It shall be the responsibility of the applicant to obtain any necessary easements or other property interests to allow access to the stormwater management facilities for inspection and maintenance purposes.

- C. Documentation Required. When constructed facilities are used for stormwater management, documentation must be provided by a qualified individual that they are designed and installed consistent with applicable local, state and federal standards, and constructed to the specifications originally approved. In most cases this would be certification by the engineer of record for the project.

Subdivision 12(a): LOT COVERAGE LIMITS – DEFINITION

The coverage of any parcel by impervious surfaces may not exceed the maximum provided in Subdivision 12(b), or the zoning district standards, whichever is more restrictive. The coverage is determined as a ratio of the impervious surface to the area of the entire parcel. The area of the entire parcel does not include that part of a parcel that is below the Ordinary High Water Mark of a lake or river. Wetlands shall be included in the total area of the parcel.

Subdivision 12(b): LOT COVERAGE LIMITS – STANDARDS

No parcel may exceed the associated impervious surface coverage limits, as described below:

- A. Residentially zoned property:
1. Not located in the Shoreland overlay district, 25%, except that a lot of record may contain up to 30% impervious surface, without a variance, if the parcel owner provides a plan to the City that treats surface water runoff for water quality, as provided in 13 (b).
 2. Located in the shoreland overlay district, 12%, except on a General or Recreational Development lake.
 3. On a General or Recreational Development lake, 15%, except that a lot of record may contain up to 20% impervious surface, without a variance, if the parcel provides a plan to the City that treats surface water runoff for water quality, as provided in 13(b).
- B. Commercial and Industrial zoned property:
1. Not located in the shoreland overlay district, 50%.
 2. Located in the shoreland overlay district, 25%.

3. Notwithstanding, if the parcel is served by municipal stormwater sewers and other infrastructure with adequate capacity, the coverage limit may be increased up to 100%, without a variance, as approved by the City Engineer. A request for such a waiver must demonstrate that the stormwater is adequately treated.
- C. Planned Unit Developments, where allowed, must not exceed 15% impervious surface as measured for the total project area and within the first 200 feet from the OHWL.

Subdivision 12(c): LOT COVERAGE LIMITS – CALCULATION CRITERIA

- A. In determining the impervious area of a surface, the square footage of the structure or surface, as viewed from above, will be used. This area will be adjusted as provided below.
- B. All structures, driveways (including gravel), parking areas, sidewalks, trails, decks, patios, stairs, and similar improvements are considered 100% impervious, except as provided:
1. Decks, or other elevated structures, that are designed with gaps of at least 0.5 inches between the flooring elements, and which have uncompacted soils under the flooring, are treated as 75% impervious.
 2. Properly installed manufactured pervious materials, such as pervious pavers or concrete, are treated as 50% impervious.
 3. Overhangs, eaves and similar extensions from the footprint of the structure that are at least 24 inches above the ground.

Subdivision 13(a): STORMWATER DISCHARGE STANDARDS – RATE AND VOLUME

All subdivisions, planned unit developments and industrial and commercial land uses, which are not exempted by Subdivision 2(b) shall demonstrate compliance with the following:

- A. Peak Rate of Discharge Standards. Stormwater runoff must be managed so that the two (2), ten (10), and one hundred (100)-year twenty four (24) hour storm event peak discharge rates from the property existing before the proposed land disturbing or development activity (pre-developed condition) shall not be increased, and accelerated channel erosion will not occur, as a result of the proposed land disturbing or development activity (post developed condition).

- B. Volume Discharge Standards. Applicant must demonstrate rights to permanent public easements from the land disturbing or development activity to the public waters. Where a continuous public easement does not exist, the City may approve the stormwater management plan provided:
1. All discharges are managed so the discharge volume of runoff from the two (2), ten (10), and one hundred (100) year twenty four (24) hour storm event from the property existing before the proposed land disturbing or development activity (pre-developed condition) is not increased, and downstream flooding is unlikely to occur, as a result of the proposed land disturbing or development activity (post developed condition).
 2. The City determines that the drainage way from the proposed land disturbing or development activity is of a type that is not likely to need maintenance in the future and the flow of stormwater through such a drainage way is not likely to become obstructed in the future.

Subdivision 13(b): STORMWATER DISCHARGE STANDARDS – WATER QUALITY

Due to the sensitive nature of the surface waters of the City, and to protect the health, welfare and safety of the public, runoff originating from impervious surfaces on the property must be treated for water quality. All properties for which a Stormwater Management Plan is required, must treat, before leaving the site or entering surface waters, at least the Water Quality Volume of surface water runoff from new impervious surfaces on the property. Water Quality Volume is the volume amount equal to 0.5 inch of runoff from impervious surfaces.

- A. In the shoreland district, the Water Quality Volume from new impervious surfaces created, plus a percentage of the existing impervious surfaces must be treated, as provided in Subd. 13(b)(B) and (C).
- B. In the shoreland district, it is the goal of this ordinance to remedy existing problems by treating the runoff from existing impervious surfaces, in addition to the new impervious surfaces. Therefore, if the parcel:
1. Has existing impervious surfaces that are not being treated for water quality;
 2. Is entirely or partially in the shoreland district; and
 3. The amount of impervious surface on the parcel is increasing;

Then, the stormwater permit must provide for treatment for water quality

for a percentage of the existing impervious surfaces, as provided in Subd. 13(b)(C):

- C. In the shoreland district, the amount of existing impervious surfaces that must be treated, in addition to the new impervious surface, is:
 - 1. All of the existing surfaces, if
 - (a) Any single addition or new improvement, or the cumulative area of all additions and improvements since the adoption of this ordinance, exceeds 700 square feet.
 - (b) If the parcel requires a variance from the impervious surface limits.
 - 2. One-fifth of all existing surfaces, if, the parcel has a total impervious surface area greater than 12%, but no variance is required.
 - 3. Otherwise, the stormwater permit must provide for treatment for water quality of 5% of all existing impervious surfaces.
- D. In all areas of the City, runoff is considered treated for water quality if:
 - 1. Site runoff volume is reduced by the Water Quality Volume; or
 - 2. One of the methods outlined in the NPDES General Stormwater Permit for Construction Activity Part III.C.1 through Part III.C.5 from the Minnesota Pollution Control Agency is followed. The NPDES General Stormwater Permit for Construction Activity can be obtained from MPCA website: (<http://www.pca.state.mn.us/water/stormwater/>); or
- E. In the shoreland district, where a NPDES General Stormwater Permit for Construction Activity from the Minnesota Pollution Control Agency does not require a permanent stormwater management system, runoff is also considered treated for water quality if:
 - 1. Runoff is treated by one of the methods provided in Subdivision 13(d)(C); or
 - 2. Runoff is treated through other means approved by the City Engineer.

Subdivision 13(c): WAIVER BASED ON EXISTING SITE CONDITIONS

The City Engineer may provide credit for existing site conditions that adequately

treat the Water Quality Volume of runoff of the subject property. The amount of the credit may be any portion or may waive the treatment requirement.

**Subdivision 13(d): APPROVED WATER QUALITY TREATMENT METHODS
(SHORELAND DISTRICT ONLY)**

Except for subdivisions, planned unit developments and industrial and commercial land uses, which are not exempted by Subdivision 2(b), and where a NPDES General Stormwater Permit for Construction Activity from the Minnesota Pollution Control Agency does not require a permanent stormwater management system, any applicant in the shoreland district that meets the following standards will receive expedited review, as these methods are approved to meet the requirements of Subdivision 13(b). Alternatively, the City Engineer may approve another method. Use of these methods does not guarantee approval, and failure to meet these options does not indicate rejection of the application for Stormwater Management Plan, but prevents the expedited review anticipated herein.

- A. Impervious surfaces required to be treated are designed to direct all runoff to approved stormwater facilities through use of rain gutters, swales, or other means.
- B. An approved stormwater facility must:
 - 1. Be designed for the capacity directed to it,
 - 2. Have berms or other protections which insures overflow is directed away from buildings, streets, driveways or walkways,
 - 3. Is placed between 10 - 30 feet from structures,
 - 4. Use a means of conveyance designed for ease of maintenance, and cannot have extensive underground or obstructed portions, and
 - 5. Has provisions to prevent erosion where excess runoff is discharged.
- C. To receive expedited review, one of the following approved methods must be followed:
 - 1. Rainwater Gardens
 - (a) A depression with a final grade depth of 8 inches below surrounding topography,
 - (b) A minimum surface area (measured at the bottom) that is,

the greater of the following values, 25 square feet or 10% of the area of the impervious surface being controlled per Subdivision 13(b),

- (c) Soil amendment mix of 70% compost and 30% sand to be tilled evenly 3-inches into base of depression. The amount added shall be, at a minimum, equal to the impervious surface area, as determined in Subdivision 13(b), divided by 1,000 times 9.36. Existing soils may be used in-lieu of soil amendment mix if demonstrated to be adequate (water infiltrates within 48 hours),
- (d) Live plant species installed follow Board of Water and Soil Resources (BWSR) Native Sedge/Wet Meadow- W2 seed mix. Plant list is available at City Hall.
- (e) Maintain separation from ground water table.
- (f) Not allowed in areas that have exposed significant materials (clogging), or near vehicle fueling and maintenance areas.

2. Rain Barrels

- (a) A minimum storage capacity equal to the Water Quality Volume. This storage capacity in gallons is equal to the area of impervious surface, as determined in Subdivision 13(b), in square feet times 0.312. This storage capacity in cubic yards is equal to the area of impervious surface, as determined in Subdivision 13(b), in square feet divided by 648.0.
- (b) Has safety provisions to prevent drowning, and
- (c) Has provisions to prevent breeding grounds for mosquitoes.
- (d) City may limit the number of individual barrels allowed for aesthetic reasons.

3. Soakaway Pit / Infiltration Trench

- (a) A minimum storage capacity equal to the Water Quality Volume. This storage capacity in gallons is equal to the area of impervious surface, as determined in Subdivision 13(b), in square feet times 0.312. This storage capacity in cubic yards is equal to the area of impervious surfaces, as determined in Subdivision 13(b), in square feet divided by 648.0,

- (b) Must consist of 1.5 to 3.0 inch clean-washed rock wrapped in filter fabric buried below surface a maximum of 5 feet deep. The amount of rock required in cubic yards is equal to the storage capacity determined in cubic yards above divided by 0.4. This formula is based on approximately 40% void space yield between individual rocks,
- (c) Bottom shall be a minimum of 3 feet above the seasonal high groundwater table to prevent the possibility of groundwater contamination,
- (d) Roof leaders/downspouts directed below ground to Soakaway Pit shall have above ground overflow pipe to a splash pad, and a removable above ground section with filter below the overflow pipe,
- (e) Non-roof runoff directed to Soakaway Pit shall be filtered by vegetated filter strip or other acceptable means prior to entering Soakaway Pit to prevent clogging,
- (f) Not allowed in high silt or clay content soils, for industrial uses, areas with exposed significant materials, vehicle fueling and maintenance areas, or other uses that risk introducing pollutants into the groundwater.

4. Shoreline Buffer

- (a) Must be constructed adjacent to shoreline, and is not available for non-riparian properties.
- (b) Runoff being treated must be sheet flow as it enters the buffer.
- (c) The buffer must be 25 feet wide over 75% length of shoreline. Buffer vegetation must be comprised of BWSR W2 mix, and left unmowed or otherwise undisturbed.

Subdivision 14: REQUIRED MAINTENANCE OF VEGETATION

Within the shoreland district, no building permit may be issued unless the proposed improvement provides for the maintenance of existing vegetation, as required by the Shoreland Overlay District.

Subdivision 15: OTHER CONSIDERATIONS

- A. Models/Methodologies. Hydrologic models and design methodologies

used for the determination of runoff and analysis of stormwater management structures shall be approved by the City Engineer. Plan, specification and computations for stormwater 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 City Engineer.

- B. Watershed Management Plans/Groundwater Management Plans. Approvals under this section must be consistent with adopted watershed management plans and groundwater management plans prepared in accordance with Minnesota Statutes section 123B.231 and 103B.255 respectively, and as approved by the local watershed authority as required by state law.
- C. Easements. If a stormwater 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 such that a continuous public easement acceptable to the City Engineer and City Attorney from the proposed land disturbing or development activity to public waters.

Subdivision 16: CONFLICTS

In the event of any conflict between the provisions of this ordinance and the provisions of an erosion control, shoreland protection or other ordinance adopted, or watershed district, state or federal permits, the more restrictive standard prevails.

Subdivision 17(a): CREATION OF STORMWATER MANAGEMENT PLAN

Zoning Administrator may establish or adopt a certificate or form for the documentation of compliance with this section and the approval of a Stormwater Management Plan.

Subdivision 17(b): CREATION OF APPLICATION

Zoning Administrator may establish or adopt a form for the application for a Stormwater Management Plan.

Subdivision 17(c): FEE

The City Council may establish a fee for the application for Stormwater Management Plan and the transfer of a Stormwater Management Plan. The fee must be by ordinance, but may be amended from time to time, and may be adopted with other land use fees. The fee may provide for different rates, if reasonably related to the application and proposed development, including variations based on the time and resources necessary from City staff and

consultants to review, the type of land use, the density of development or the ratio or amount of impervious surface created.

Subdivision 17(d): ENFORCEMENT

The requirements of this ordinance may be enforced as any zoning control.