

AN ORDINANCE REGULATING AND ESTABLISHING STANDARDS FOR STORM WATER DRAINAGE AND DEVELOPMENT PRACTICES AFFECTING ISSUES OF EROSION AND SEDIMENTATION CONTROL.

THE CITY COUNCIL OF THE CITY OF OAK PARK HEIGHTS, WASHINGTON COUNTY, MINNESOTA DOES ORDAIN:

404.01 Application.

All new subdivisions, planned unit developments, plats, and other developments of real property shall incorporate adequate provisions for storm water runoff consistent with the Oak Park Heights Storm Water Management Plan (SWMP) as amended, and with established City policies and ordinances particularly Soil Erosions and Restrictive Soils Ordinances of the City of Oak Park Heights and shall conform to the following standards found herein.

This ordinance is also adopted pursuant to the authorization and policies contained in Minnesota Statutes §§ 103B, 103D and, 462; Minnesota Rules, Parts 6120.2500 to 6120.3900; and Minnesota Rules Chapters 8410 and 8420. This ordinance is also intended to meet the construction site erosion and sediment control and post-construction stormwater management regulatory requirements for construction activity and small construction activity (NPDES Permit) as defined in 40 CFR 122.26(b)(14)(x) and (b)(15), respectively. This ordinance is also intended to meet the Minimal Impact Design Standards (MIDS) developed under Minnesota Statutes § 115.03, subd. 5c. All stormwater management activities shall comply with MIDS and/or requirements of the relevant Watershed Management Organization and/or Watershed District.

A. Plan Required.

The proposed provisions for storm water runoff shall be documented in a stormwater runoff water management plan, prepared by a registered professional engineer to the minimum standards described in paragraph B of this policy.

B. Minimum Standards for Runoff Water Management Plans.

A stormwater runoff management plan shall include the following items:

1. A map containing a delineation of the sub-watershed contributing runoff from off-site, and proposed and existing sub-watersheds on-site. The delineation shall conform to the nomenclature of the SWMP and shall indicate any significant departures from the watershed delineation of the SWMP.
2. Delineation of existing on-site wetlands as defined in the Wetland Conservation Act, lakes, streams, shoreland, and/or floodplain areas.

3. For waterbodies and channels, a listing of normal runout and calculated ten (10) year and one hundred (100) year elevations on site for both existing and proposed conditions.
4. Storm water runoff volumes and rates for existing and proposed conditions.
5. All hydrologic and hydraulic computations completed to design the proposed storm water management facilities. Reservoir routing procedures and critical duration runoff events shall be used for design of water storage areas and outlets.
6. A checklist of Best Management Practices to demonstrate that, to the maximum extent practical, the plan has incorporated the structural, on-structure, and on-site Best Management Practices to meet the stormwater quality and volume control standards of MIDS and the Minnesota Stormwater Manual.
7. A grading plan incorporating overflow routes along streets or drainage easements designed to protect structures from damage due to:
  - a. Storms in excess of the design storm, or
  - b. Clogging, collapse or other failure of the primary drainage facilities.
8. An assessment of the potential for construction or contribution to regional detention basins, as opposed to the construction of on-site basins. The SWMP identifies potential regional pond areas for control of rate and nutrient loading. The following criteria shall be used to determine whether on-site storage is required for within the subdivision:
  - a. If the runoff water management plan indicates construction or enlargement of a storage site or water quality storage in a wetland or other waterbody, the facility or its equivalent shall be constructed to meet the goals of the SWMP.
  - b. If a proposed subdivision will be directly tributary to a waterbody without intervening detention storage, additional on-site pond construction for water quality treatment will be required if the waterbody is in one of the following classifications:

Category I: Water bodies supporting direct body contact recreation such as swimming, skin diving, or water skiing.

Category Ia: Waterbodies capable of supporting a trout fishery.

Category II: Waterbodies supporting non-contact recreational activities such as sailboating, motor boating, canoeing, and fishing.

Category III: Waterbodies supporting aesthetic viewing and wildlife habitat functions, providing open space, scenic vistas, and opportunities for wildlife observation or warm water fishing.

Category IV: Nutrient Traps. Waterbodies functioning mainly to reduce downstream loading of phosphorus and other pollutants.

- c. If a proposed subdivision is indirectly tributary to a Category I, II or III waterbody and intervening regional detention storage is inadequate, in the opinion of City staff, to meet the water quality goals for downstream waterbodies as described in the SWMP, additional on-site pond construction will be required to meet these goals.
  - d. If a proposed subdivision will increase rates of runoff and where downstream storm water storage or conveyance facilities are inadequate to protect downstream riparian owners from effects of these increases, then on-site storm water storage must be constructed to restrict storm water rates to the pre-development rates.
9. Where on-site water quality detention basins are required, copies of the calculations determining the design of the basins. The size and design considerations will be dependent on the receiving waterbody's water quality category, the imperviousness of the development, and the degree to which on-site infiltration of runoff is encouraged. Design of on-site detention basins, as described in the site's Runoff Water Management Plan, shall incorporate recommendations from the Minnesota Stormwater Manual published by the Minnesota Pollution Control Agency. The following design considerations are

required for on-site water quality detention basins based on the receiving water's water quality category. These designs include permanent detention for water quality treatment; extended detention designs may be substituted provided that they provide treatment equivalent to the requirements below:

a. Basins Tributary to Category I and Ia Waterbodies.

- 1) Permanent pool ("dead storage") volume below the normal outlet shall be greater than or equal to the runoff from a 2.5 inch twenty-four (24) hour storm over the entire contributing drainage area assuming full development
- 2) A permanent pool average depth (basin volume/basin area) which shall be greater than four (4) feet, with a maximum depth of less than ten (10) feet.
- 3) An emergency spillway (emergency outlet) adequate to control the one hundred (100) year frequency critical duration rainfall event.
- 4) Basin side slopes above the normal water level should be no steeper than three to one (3:1) when possible, and preferably flatter. A basin shelf with a minimum width of ten feet and a maximum slope of ten to one (10:1) below the normal water level is recommended to enhance wildlife habitat, reduce potential safety hazards, and improve access for long-term maintenance.
- 5) To prevent short-circuiting, the distance between the major inlets and normal outlet shall be maximized.
- 6) A flood pool (temporary storage) volumes above the principal outlet spillway shall be adequate so that the peak discharge rate from the ten (10) and two hundred (200) year frequency, critical duration storm is not greater than the peak discharge for a similar storm and predevelopment watershed conditions.
- 7) Extended detention of runoff from the more frequent (one year to five year) storms shall be achieved through a principal spillway design which shall

include a perforated vertical riser, a small orifice outlet, or a compound weir.

- 8) Effective energy dissipation devices which reduce outlet velocities to four (4) feet per second or less shall consist of rip rap, stilling pools, or other such measures to prevent erosion at all storm water outfalls into the basin and at the detention basin outlet.
- 9) Trash and floatable debris skimming devices shall be placed on the outlet of all on-site detention basins to provide treatment up to the critical duration ten (10) year storm event. These devices can consist of baffled weirs, submerged inlets, or other such measures capable of restricting the outflow of floatable materials, including litter, oil and grease. Computations for the design of such devices shall be included.
- 10) For purposes of erosion control, vegetation protection and wildlife habitat enhancement, the ten year flood level of the basin shall be no more than two (2) feet above the normal level of the basin.

b. Basins Tributary to Category II Waterbodies.

- 1) A permanent pool ("dead storage") volume below the normal outlet which shall be greater than or equal to the runoff from a two (2) inch twenty-four (24) hour storm over the entire contributing drainage area assuming full development.
- 2) All other requirements as listed in Items 2 through 10 for Category I and Ia waterbodies.

c. Basins Tributary to Category III Waterbodies.

- 1) A permanent pool ("dead storage") volume below the normal outlet which shall be greater than or equal to the runoff from a one-and-one-half (1.5) inch twenty-four (24) hour storm over the entire contributing drainage area assuming full development.
- 2) All other requirements as listed in Items 1 through 10 for Category I and Ia waterbodies.

- d. Basins Tributary to Category IV Waterbodies.
  - 1) Any practical measures needed to maintain the function and character of the Category IV waterbodies.
  
- e. Basins Tributary to Wetlands.
  - 1) Sedimentation capacity capable of protecting the wetland from filling due to water borne silt and sand. Where feasible, appropriately sized sump manholes or other in-line treatment capable of being cleaned via manholes shall be preferred.
  
  - 2) All other requirements as listed in Items 2 through 10 for Category I and Ia Water bodies.

**404.02 Flexible treatment alternatives for sites with restrictions**

- A. Applicant shall fully attempt to comply with the appropriate performance goals described in section 404.02(D) above. Options considered and presented shall examine the merits of relocating project elements to address varying soil conditions and other constraints across the site. If full compliance is not possible due to any of the factors listed below, the applicant must document the reason. If site constraints or restrictions limit the full treatment goal, the following flexible treatment options may be considered:

Applicant shall document the flexible treatment options sequence starting with Alternative #1. If Alternative #1 cannot be met, then Alternative #2 shall be analyzed. Applicants must document the specific reasons why Alternative #1 cannot be met based on the factors listed below. If Alternative #2 cannot be met then Alternative #3 shall be met. Applicants must document the specific reasons why Alternative #2 cannot be met based on the factors listed below. When all of the conditions are fulfilled within an alternative, this sequence is completed.

Volume reduction techniques considered shall include infiltration, reuse & rainwater harvesting, canopy interception & evapotranspiration, and additional techniques included in the MIDS calculator and the Minnesota Stormwater Manual. Higher priority shall be given to BMPs that include volume reduction. Secondary preference is to employ filtration techniques, followed by rate control BMPs. Factors to be considered for each alternative will include:

- 1. Karst geology
- 2. Shallow bedrock.
- 3. High groundwater

4. Hotspots or contaminated soils
  5. Drinking Water Source Management Areas or within 200 feet of drinking water well
  6. Zoning, setbacks or other land use requirements
  7. Poor soils (infiltration rates that are too low or too high, problematic urban soils)
  8. Cost Analysis.
- B. Alternative #1: Applicant attempts to comply with the following conditions:
1. Achieve at least 0.55 inch (0.55”) volume reduction from all impervious surfaces if the site is new development or from the new and/or fully reconstructed impervious surfaces for a redevelopment site.
  2. Remove 75% of the annual TP load from all impervious surfaces if the site is new development or from the new and/or fully reconstructed impervious surfaces for a redevelopment site.
  3. Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site.
- C. Alternative #2: Applicant attempts to comply with the following conditions:
1. Achieve volume reduction to the maximum extent practicable.
  2. Remove 60% of the annual TP load from all impervious surfaces if the site is new development or from the new and/or fully reconstructed impervious surfaces for a redevelopment site.
  3. Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site.
- D. Alternative #3: Off-site Treatment. Mitigation equivalent to the performance of 1.1 inches (1.1”) of volume reduction for new development or redevelopment, (including banking or cash) can be performed off-site to protect the receiving water body. Off-site treatment shall be achieved in areas selected in the following order of preference:
1. Locations that yield benefits to the same receiving water that receives runoff from the development activity.
  2. Locations within the same Department of Natural Resource (DNR) catchment area (Hydrologic Unit 08) as the development activity.
  3. Locations within the next adjacent DNR catchment area upstream.
  4. Locations anywhere within the community’s jurisdiction.
2. Other Design Standards
- A. Minnesota Stormwater Manual. All volume control for water quality and quantity and site design specifications shall conform to the current version of the Minnesota Stormwater Manual.

- B. Site erosion and sediment control requirements. All erosion and sediment control requirements shall conform to the current requirements of NPDES/SDS Construction Stormwater General Permit.
- C. WMO / WD requirements. All stormwater management and erosion and sediment control activities shall comply with all applicable requirements of the Watershed Management Organizations or Watershed Districts in which the project is located. In case provisions in this ordinance and requirements of watershed district or watershed management organizations overlap or conflict, the strictest provisions shall apply to the activities.
- D. MIDS calculator. Final site design and choice of permanent stormwater volume reduction practices shall be based on outcomes of the MIDS Calculator (or other City approved model that shows the performance goal can be met) and other requirements of the applicable watershed district or watershed management organization.

404.03        Severability.  
If any section, clause, provision, or portion of this Ordinance is adjudged unconstitutional or invalid by a Court of competent jurisdiction, the remainder of this Ordinance is not affected.

404.04        Interpretation.  
This Ordinance is intended to be applied and interpreted in conjunction with the existing ordinances of the City of Oak Park Heights. To the extent that there is any conflict in interpretation between the various provisions thereof, the more restrictive interpretation shall apply.

404.05        The Provisions are Accumulative.  
The provisions of this Ordinance are accumulative to all other laws, ordinances, and regulations heretofore passed by the City of Oak Park Heights which may hereinafter be passed covering any subject matter in this ordinance.

Amended by the City Council on 09/27/2016