SECTION _10_ PERFORMANCE STANDARDS

10.4 RESERVED FOR FUTURE USE ~~CONSTRUCTION EROSION CONTROL STANDARD:~~

~~10.4.1 Goal:~~

~~A goal of the County Comprehensive Local Water Plan is to "reduce water erosion in the County". The following objective in the plan is to "protect critical areas from water erosion". The action statement to address the serious problem of water erosion and sedimentation along the banks of lakes and rivers is "adopt a construction site erosion control ordinance".~~

~~10.4.2 Purpose:~~

~~The purpose of this section is to encourage property owners and contractors to recognize that control of soil erosion is of primary importance on any construction project and that placement/installation of erosion control measures takes priority over all other construction activity on the site/lot.~~

~~10.4.3 Applicability:~~

~~This section shall be effective within 500 ft. of the high water mark of any lake, river or stream beginning on January 1, 1996. Following one year of administration of this section by the County, the Board of Commissioners may, by resolution, adopt this section for all shorelands or portions thereof in which it is deemed necessary.~~

~~10.4.4 Requirements:~~

~~1. Any development activity within the regulated area on which zoning permits are necessary may be required by the Department to submit an Erosion Control Plan in any instance where more than 1500 square yards of soils are exposed by removal of vegetation.~~

~~2. The **Erosion Control Plan** shall include a map showing where exposed soils will occur, the mitigating erosion control activity proposed and a written statement indicating how the erosion control activity will take place.~~

~~3. The **Erosion Control Plan** shall include a date certain by which all exposed soils are protected by permanent vegetation or other cover.~~

~~4. The **Erosion Control Plan** shall have a goal of no erosion.~~

~~5. The zoning permit activity shall not be allowed until the **Erosion Control Plan** is deemed acceptable to the County Zoning Administrator.~~

~~6. To ensure that the construction site **Erosion Control Plan** activity is implemented, maintained and properly operated, a bond or cash deposit shall be posted with the permitting authority in an amount determined as follows:~~

~~$1.00 per square yard of exposed soils beyond a 1500 square yard minimum plus $500.00. If an approved Erosion Control Plan is not properly implemented, or maintained, the bond or cash deposit shall be forfeited to the County.~~

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~~7. The bond or cash deposit shall be returned to the permittee when all exposed soils are fully stabilized according to acceptable practices.~~

10.24 EROSION CONTROL & STORMWATER MANAGEMENT:

10.24.1 Purpose

A. The purpose of this section is to protect public health and safety, water resources, the general welfare of the community and the public enjoyment and use of Pope County's natural resources.

B. This section serves to provide standards to help regulate construction site erosion and uncontrolled stormwater runoff due to land disturbing and land development activities.

10.24.2 Impervious Surface Standards

A. **Maximum impervious surface coverage of parcels/lots shall not exceed the following:**

Zoning District	Maximum Impervious Surface	Applicable Area	Requirements
• Shoreland-General Development • Shoreland-Recreational Development • Shoreland-Rivers & Streams	25%	Total lot area above the OHW	• Site Analysis of stormwater flows • 2 Erosion Control BMPs • Stormwater Management Plan
• Shoreland-Natural Environment	20%	Total lot area above the OHW	• Site Analysis of stormwater flows • 2 Erosion Control BMPs • Stormwater Management Plan
• Residential	25%	Total lot area	• Site Analysis of stormwater flows • 2 Erosion Control BMPs
• Non-Intensive Agriculture • Agriculture Protection	Not Applicable	Project Area	• Site Analysis of stormwater flows • 2 Erosion Control BMPs
• Commercial • Industrial	Not Applicable	Parcel area	• Site Analysis of stormwater flows • 2 Erosion Control BMPs • Stormwater Management Plan

B. For purposes of calculating impervious surface on undeveloped parcels/lots, a twelve (12) foot wide driveway will be assumed.

C. **Exemptions to Impervious Surface Standards**

1. Extractive use.

10.24.3 General Standards

A. **Site Analysis/Plan:** All construction, land disturbance or development activities shall be required to include a site analysis of said property to determine current and proposed stormwater flows, required erosion control and/or stormwater management best management practices (BMPs):

1. Site Analysis/Plan shall include:
   a. All current site features
   b. Proposed site features
   c. Topography including at a minimum two foot contours
   d. Current stormwater flows/drainage patterns
   e. Proposed stormwater flows/drainage patterns
   f. Two (2) proposed erosion control and stormwater BMPs as provided in the Minnesota Stormwater Manual.
2. Site analysis/plans may be completed by a landowner, unless otherwise stated in this ordinance. A landowner may alternatively elect to employ a stormwater management professional, licensed engineer, or registered land surveyor.
3. All sites shall be required to show the location of two (2) BMPs that will be installed prior to construction.
4. Site Analysis/Plan shall be reviewed and approved by the department prior to any disturbance or construction activities taking place.
5. The Department shall evaluate the erosion control and stormwater management needs of each lot in doing all reviews, approvals, and permit issuances.
6. Upon installation of said erosion control or stormwater BMPs, the Permit holders or their designated agent shall notify the Department within 24 hours after implementation of the approved stormwater management plan or erosion control measures.
7. The Department shall conduct an on-site inspection to ensure compliance with the approved stormwater management plan.

B. Proper erosion and sediment control practices shall be followed within the county as described in this section. All land disturbing activities, whether or not a permit is required, shall be subject to the following performance standards:

1. All sites shall be required to install two (2) BMPs, as detailed above on the site analysis/plan, prior to construction.
2. No land owner, operator, contractor or applicant shall cause or conduct any land disturbing activity which causes erosion or sedimentation, damages water or soil resources or creates off-site impacts.
3. No land disturbing activity shall result in an increase in channel erosion in any watercourse, whether permanent or intermittent, at any time during or following development.
4. No land disturbing activity shall result in the creation of unstable slopes which persist after the completion of the development.
5. All development shall conform to the natural limitations presented by the topography and soil types in order to minimize soil erosion and sedimentation.
6. Land disturbing activities shall only occur in increments of workable size such that adequate erosion and sediment controls can be provided throughout all phases of a development. The smallest practical area of

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land shall be exposed or otherwise disturbed at any one period of time.

7. Permanent or temporary soil stabilization shall be applied to disturbed areas (areas where vegetation has been removed or where cuts have been made), as soon as possible, but not to exceed fourteen (14) days after a substantial portion of rough grading has been conducted unless an extension is granted by the Administrator. Soil stabilization measures shall be selected to be appropriate for the time of year, site conditions and estimated duration of use.

8. Every applicant for a permit shall, at a minimum, adhere to erosion control measure standards and specifications contained in the MPCA publication "Protecting Water Quality in Urban Areas"; or a successor publication.

10.24.4 Stormwater Management Plans

A. **Stormwater Management Plans are Required under the following circumstances:**

1. Any new resort and/or planned unit development in accordance with Section 10.17 of this Ordinance.

2. Redevelopment of an existing parcel that currently exceeds impervious surface lot coverage limits and will stay at or below current impervious surface coverage. The redevelopment of an impervious area already being treated by an approved stormwater plan does not require a new plan to be implemented. A letter shall be submitted from a licensed engineer certifying that the existing stormwater facilities are properly installed, functioning and maintained.

3. Any variance request relating to impervious surface coverage limits shall require the submittal of a stormwater management plan, prepared by a stormwater management professional, licensed engineer or registered land surveyor, pursuant to this ordinance.
   a. The Stormwater Management Plan shall be submitted to the Department for approval prior to issuance of any permits for said property.
   b. Permit holders or their designated agent shall notify the Department within 24 hours after implementation of the approved stormwater management system.
   c. The Department shall conduct an on-site inspection of stormwater management systems to ensure compliance with the approved stormwater management plan.

4. Any other land development activity including, but not limited to, redevelopment or alteration of existing buildings and other structures that the Administrator determines may significantly increase downstream runoff volumes, flooding, soil erosion, water pollution or property damage or significantly impact a lake, stream or wetland.

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B. **Stormwater Management Design Standards**

1. All stormwater management plans shall be designed for permanent on-site treatment of one inch of stormwater runoff on all impervious surface coverage on the lot.
   a. This means that a volume of water equal to one inch multiplied by the area of impervious surface must be treated.
2. All stormwater management systems shall be capable of safely passing a 2 year-24-hour storm event, before the runoff leaves the project site or enters surface waters.
3. Treated stormwater runoff shall use existing natural drainage ways and vegetated soil surfaces to convey, store, further filter, and retain stormwater runoff before discharge to public waters or off site.
4. Preference shall be given to designs using surface drainage, vegetation, infiltration and volume reduction techniques rather than buried pipes and man-made materials and facilities.
   a. Volume reduction techniques may include infiltration basins, rain gardens, enhanced infiltration swales, filter strips, disconnected impervious areas, soil amendments, bioretention, and other approved volume reduction techniques.
5. Constructed stormwater outfalls to public waters and non-incidental wetlands must provide for filtering or settling of suspended solids and skimming of surface debris before discharge into said waterbody or basin.
6. All management technologies must be consistent with the most current version of the Minnesota Stormwater Manual, which is incorporated herein by reference.
7. **Permeable Pavement Systems:**
   a. As defined in the Minnesota Stormwater Manual, permeable pavement systems allow stormwater runoff to filter through surface voids into an underlying stone reservoir where it is temporarily stored and/or infiltrated. The most commonly used permeable pavement surfaces are pervious concrete, porous asphalt, and permeable interlocking concrete pavers.
   b. Permeable pavement systems should not be used in high pollutant loading sites, should not be used as a pollutant treatment method, and they are not suitable for high traffic areas. See the Minnesota Stormwater Manual for further design specifications.
   c. Permeable pavement systems for projects 400 square feet in size or smaller shall not require an engineered design provided that the manufacturer's specifications, industry standards, the Minnesota Stormwater Manual and all other aspects of this ordinance are followed.

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d. The following standards apply to Conditional Use Permit and Variance Applications:

i. The base of the installed permeable pavement system must have a minimum of three feet separation from the seasonally saturated soils or from the bedrock.

ii. The design of a permeable pavement system must allow the infiltration of one inch of stormwater on the pavement surface.

iii. Permeable pavement systems for projects over 400 square feet in size shall require an engineered design provided that the manufacturer's specifications, industry standards, the Minnesota Stormwater Manual and all other aspects of this ordinance are followed.

C. **Stormwater Management Plan Requirements:**

1. All required plans shall be drawn to an easily legible scale, shall be clearly labeled and shall be signed by its designer (landowner or professional where required). A minimum scale of 1:100 shall be used, unless otherwise approved by the Administrator.

2. A narrative describing the proposed project, including an implementation schedule.

3. A grading plan shall be submitted that includes:
   a. Existing and proposed property lines and lot dimensions.
   b. Existing and proposed drainage, utility and other easements.
   c. Existing zoning classifications for land within and abutting the development.
   d. Location and dimensions of existing and proposed public and private roads and structures.
   e. All natural and artificial water features including, but not limited to, lakes, ponds, streams (including intermittent streams) and ditches. Where available, show the ordinary high water level of all lakes, one hundred (100) year flood elevations and any delineated wetland boundaries.
   f. Existing vegetative cover, wooded areas and a clear boundary of any vegetation proposed for removal.
   g. Existing and proposed elevations shown at two (2) foot contours, extending at least two hundred (200) feet beyond the property boundaries or as required to clearly indicate the relationship of proposed changes to existing topography and remaining features.
   h. Locations and dimensions of all proposed land disturbing activities and any phasing of those activities.

4. A drainage plan of the developed site showing the direction stormwater will be conveyed, locations where stormwater will be allowed to collect and locations of all discharge points from the property. The drainage plan shall show all drains or tile lines on the property.

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5. A preconstruction and postconstruction Erosion Protection and Sediment Control Plan.
6. A landscape plan or written description of methods used to achieve final stabilization, the type of stabilization and rate of application. Stabilization methods shall be described for each major phase of construction including, but not limited to, mass grading operations and stabilization for individual lots within any development.
7. Information shall be included which clearly identifies all elevations and grades for streets, ditches, stormwater management facilities, wetlands, lakes, pipe inverts and pipe outlets.
8. A map showing the boundaries of each soil type, the hydrologic classification of each soil type and the estimated acreage of each soil type. The soil information shall be based on the most current version of the United States Department of Agriculture (USDA) Web Soil Survey, or a successor publication.
9. A detailed schedule of anticipated starting date and completion date of each phase of construction and/or land disturbing activity, including the installation of erosion and sediment control measures needed to meet the requirements of this Ordinance.

10.24.5. Financial Security

A. **Financial guarantees required for:**
   1. Standard subdivisions;
   2. Resorts;
   3. PUDs.

B. Once a stormwater management plan is approved by action of the Board of County Commissioners or the Administrator, a financial guarantee, as described below, shall be submitted to the County. This guarantee is necessary to ensure the satisfactory installation, completion and maintenance of the measures as required in the stormwater management plan.
   1. A stormwater management system cost estimate analysis shall be completed by a competent party, such as a professional engineer, a contractor capable of installation of the stormwater management system or a person with suitable expertise or experience with stormwater management systems. The analysis shall identify the financial resources that will be available to pay for the installation and maintenance (20 years) of the stormwater management system.
   2. To ensure that the stormwater management system is properly installed and functioning per design, the Pope County Board of Commissioners requires the owner and/or operator of the property to provide financial surety by the establishment of a cash escrow in an amount equal to the cost estimate analysis provided in accordance with section 10.24.5.B.1. Any alternative in the amount or form of assurance must be approved by the Pope County Board of Commissioners.

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3. Final plat approval or issuance of a conditional use permit shall not be granted until a financial guarantee has been submitted to the County.
4. Release of any portion of the financial guarantee is contingent on approval from a professional engineer that as-built conditions meet original design specifications and a site visit by County staff is conducted to evaluate the condition of erosion and sediment control measures.

10.24.4 Maintenance of Stormwater Facilities

A. All stormwater management facilities shall be designed to minimize the need for maintenance, to provide access for maintenance purposes and to be structurally sound.

B. All stormwater management facilities shall have a plan of operation and maintenance that assures continued effective removal of pollutants carried in stormwater runoff.

C. 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.

D. The Board may require a developer to enter into a contract with a stormwater professional who would perform periodic inspection and maintenance for installed stormwater management facilities.

E. Newly installed and rehabilitated catch basins shall be provided with a sump area for the collection of coarse-grained material as specified by the Minnesota Stormwater Manual. It shall be the duty of the landowner to clean such basins when sediment or other material has accumulated to occupy 25% of the basin's original volume.

10.24.5 Minnesota Pollution Control Agency Permit

A. Construction activity that results in the disturbance of one or more acres will require:
   a. A National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) stormwater permit from the Minnesota Pollution Control Agency (MPCA);
   b. A Stormwater Pollution Prevention Plan; and
   c. All other requirements as prescribed by MPCA.

B. Construction activity that results in the disturbance of less than one acre may also require a MPCA permit depending on the nature of the activity.

C. Permit applicants are responsible to contact MPCA to determine if a permit is required.

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10.24.1 ~~The following general and specific shall apply:~~

D. ~~**General Standards.**~~

5. ~~When possible, existing natural drainageways, wetlands, and vegetated soil surfaces must be used to convey; store, filter, and retain storm water runoff before discharge to public waters.~~

6. ~~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.~~

7. ~~When development density, topography features, and soil and vegetation conditions are not sufficient to adequately handle storm water runoff using natural features and vegetation, various types of constructed facilities such as diversions, settling basins, skimming devices, dikes, waterways, and ponds may be used. Preference must be given to designs using surface drainage, vegetation, and infiltration rather than buried pipes and man-made materials and facilities.~~

8. ~~Landowners may only drain surface water upon neighboring land if they act in good faith and;~~

   a. ~~There is a reasonable necessity for the drainage;~~

   b. ~~Care is taken to avoid unnecessary injury to the neighboring land;~~

   c. ~~The utility or benefit accruing to the drained land outweighs the gravity of the harm resulting to the burdened land; and~~

   d. ~~The drainage is accomplished by reasonably improving and aiding the natural drainage system, or if, in the absence of a practical natural drain, a reasonable and feasible artificial drainage system is adopted.~~

E. ~~**Specific Standards.**~~

1. ~~Impervious surface coverage of lots must not exceed twenty-five (25) percent of the lot area or twenty (20) percent of the lot area in Natural Environment Shoreland Zoning. For the purposes of this section, twenty-five (25) percent of the total area covered by pervious paver systems designed to allow the infiltration of water between pavers may be considered pervious by conditional use permit provided that:~~

   a. ~~The pervious pavement system shall be designed and certified by a registered engineer or landscape architect and installed by someone qualified in the particular system used, or the installation shall be overseen by a product representative to ensure its proper long-term function;~~

   b. ~~The pervious pavement designer shall include maintenance instructions to the property owner along with a maintenance schedule, with a copy to the Land & Resource Office to be filed along with the permit;~~

2. ~~When constructed facilities are used for storm water management, documentation must be provided by a qualified individual that they are~~

designed and installed consistent with the field office technical guide of the local soil and water conservation districts.

3. New constructed storm water outfalls to public waters must provide for filtering or settling of suspended solids and skimming of surface debris before discharge.

4. Impervious Surface Replacement.

a. **Purpose:** The purpose of the regulations in this subsection is to prevent excessive amount of runoff that will be generated during a rainstorm by an enlarged impervious area. Such excessive runoff causes erosion and transport of pollutants to public waters thereby degrading water quality. Existing properties exceeding the standards for impervious surface coverage present a distinct management challenge from that of newly developed properties and there is a need to establish clear and consistent guidelines for how re-development of these lots may occur.

b. **Standards:** Parcels that exceed the maximum allowed impervious surface may construct additional impervious surfaces without a variance or conditional use permit if the proposed new impervious surface meets all setbacks, height and other regulations of this ordinance and if one of the two following conditions are met:

i. The applicant removes existing impervious surfaces at a ratio of one and one-half (1.5) square feet removed for every one (1) square foot added and restores these areas to a permeable surface.

a) Permeable pavement systems are encourage in the management of sites currently over the impervious surface limit and shall be credited as twenty-five (25) percent pervious for these sites when installed according to the requirements of Section V.L.4.a.(2)(d)iii. Applicants are encouraged to replace existing impervious surfaces with natural vegetation at the 1.5 to 1 ratio listed above, however, permeable pavement systems may also be used. In these cases they are to replace existing impervious surfaces at a ratio of at least four (4) square foot of new impervious surface being added;

ii. The applicant removes existing impervious surfaces at a 1:1 ratio and restores those areas to a permeable surface and in addition, submits a comprehensive stormwater management plan that emphasized infiltration and onsite retention of stormwater for at least the two-year 24-hour storm even through a combination of methods including buffer strips, swales, rainwater gardens, permeable pavement systems and other low impact development methods. The stormwater management plan must be designed by a registered engineer or landscape architect and installed as designed by a qualified professional.

a) Permeable pavement systems may be considered as 100% pervious when submitted as part of a stormwater management plan consistent with this section.

F. **Specific Requirements:** The applicant must provide the following evidence, in

~~conjunction with meeting one of the two standards listed in (d)ii. above:~~

1. ~~A survey shall be submitted showing calculations of the exact dimensions of all existing impervious surfaces and of the lot before and after completion of the project. This survey must be submitted and approved by the Land & Resource Director before any work may begin on the project;~~
2. ~~In replacing existing impervious surfaces with surfaces designed to be permeable or porous, the applicant must give priority to replacing those surfaces closest to the lake or those surfaces where the replacement is most likely to improve storm water management.~~
3. ~~No pervious or porous pavement systems shall be allowed in a bluff impact zone or shore impact zone unless specifically approved otherwise by the Land & Resource Director when restoration to natural vegetation would not be practical or advised by a qualified engineer. These areas shall be maintained or restored to natural vegetative buffer whenever feasible;~~
4. ~~A pervious pavement system shall be designed and certified by a registered engineer or landscape architect and installed by someone qualified in the particular system used, or the installation shall be overseen by a product representative to ensure that is proper long term function;~~
5. ~~A pervious pavement system shall be set back from structures having basements, septic system leach fields, steep slopes and wells at least 10 feet unless otherwise designed by a registered engineer so as to prevent impacting these features;~~
6. ~~A pervious pavement design shall include maintenance instructions to the property owner along with a maintenance schedule, with a copy to the Land & Resource Office to be filed along with the permit;~~
7. ~~All best management practices must be compatible with local stormwater management plans and NPDES Phase II stormwater permits, where required.~~
8. ~~If, in the removal of existing impervious surfaces, the total lot coverage falls below the maximum coverage allowed by this ordinance, the applicant must thereafter conform to the standards of this ordinance.~~

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