COON CREEK WATERSHED DISTRICT

RULES

BOARD APPROVED: OCTOBER 10, 2022

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COON CREEK WATERSHED DISTRICT RULES

1 INTRODUCTION AND GENERAL PURPOSE ..... 4~~43~~

1.1 STATUTORY AUTHORIZATION ..... 4~~43~~
1.2 FINDINGS ..... 4~~43~~
1.3 PURPOSE AND INTENT ..... 4~~43~~
1.4 RELATION TO GROUNDWATER ..... 5~~54~~

2 PROCEDURAL REQUIREMENTS ..... 5~~54~~

2.1 PERMIT REQUIRED ..... 6~~64~~
2.2 TREATMENT TO THE MAXIMUM EXTENT PRACTICABLE ..... 6~~65~~
2.3 PRE-APPLICATION MEETING ..... 6~~65~~
2.4 APPLICATION ..... 6~~65~~
2.5 TIMING OF APPLICATIONS AND BOARD MEETINGS ..... 6~~65~~
2.6 AUTHORIZATION TO ENTER AND INSPECT PROPERTY ..... 6~~65~~
2.7 FEES AND SECURITY ESCROWS ..... 6~~65~~
2.8 PERMIT APPLICATION REVIEW PROCEDURE ..... 7~~76~~
2.9 PERMIT TERMS ..... 9~~97~~
2.10 GENERAL PERMIT REQUIREMENTS ..... 9~~98~~
2.11 PERMIT INSPECTIONS ..... 10~~109~~
2.12 CLOSE OUT REQUIREMENTS ..... 11~~1110~~

3 STORMWATER MANAGEMENT ..... 11~~1110~~

3.1 POLICY ..... 11~~1110~~
3.2 SCOPE AND APPLICABILITY ..... 12~~1211~~
3.3 STANDARDS ..... 12~~1211~~
3.4 SUBMITTALS ..... 16~~1615~~
3.5 MAINTENANCE REQUIREMENTS ..... 17~~1716~~

4 SOILS AND EROSION CONTROL ..... 18~~1817~~

4.1 POLICY ..... 18~~1817~~
4.2 SCOPE AND APPLICABILITY ..... 19~~1917~~
4.3 STANDARDS ..... 19~~1917~~
4.4 SUBMITTALS ..... 20~~2018~~

5 WETLANDS ..... 20~~2019~~

5.1 POLICY ..... 20~~2019~~
5.2 SCOPE AND APPLICABILITY ..... 20~~2019~~
5.3 STANDARDS ..... 21~~2119~~
5.4 SUBMITTALS ..... 21~~2119~~

6 FLOODPLAIN ..... 22~~2220~~

6.1 POLICY ..... 22~~2220~~
6.2 SCOPE AND APPLICABILITY ..... 22~~2220~~
6.3 STANDARDS ..... 22~~2220~~
6.4 SUBMITTALS ..... 22~~2221~~

DRAFT

7 DRAINAGE, BRIDGES, CULVERTS, AND UTILITY CROSSINGS ..... 23~~2321~~

7.1 POLICY ..... 23~~2321~~
7.2 SCOPE AND APPLICABILITY ..... 23~~2321~~
7.3 STANDARDS ..... 23~~2322~~
7.4 SUBMITTALS ..... 24~~2423~~

8 BUFFERS ..... 25~~2523~~

8.1 POLICY ..... 25~~2523~~
8.2 STANDARDS ..... 25~~2524~~
8.3 SUBMITTALS ..... 26~~2624~~

9 ILLICIT DISCHARGE ..... 26~~2624~~

9.1 ILLICIT DISCHARGE PROHIBITION ..... 26~~2624~~
9.2 ILLICIT CONNECTIONS PROHIBITED ..... 27~~2725~~

10 WAIVERS AND VARIANCES ..... 27~~2725~~

10.1 WAIVERS ..... 27~~2725~~
10.2 VARIANCES ..... 27~~2726~~

11 ENFORCEMENT AND PENALTIES ..... 28~~2826~~

11.1 VIOLATIONS ..... 28~~2826~~
11.2 NOTICE OF VIOLATION ..... 28~~2826~~
11.3 REMEDIAL METHODS ..... 28~~2827~~
11.4 APPEAL OF NOTICE OF VIOLATION ..... 29~~2927~~
11.5 STOP WORK ORDERS ..... 29~~2927~~
11.6 RESTORATION OF LANDS ..... 29~~2927~~
11.7 ATTORNEY FEES AND COSTS ..... 29~~2927~~

12 ADOPTION OF RULE ..... 29~~2927~~

12.1 SEVERABILITY ..... 29~~2927~~
12.2 PRIOR RULES AND REGULATIONS ..... 29~~2928~~
12.3 CERTIFICATION OF RULES ..... 30~~2928~~

APPENDIX A: DEFINITIONS 29

APPENDIX B: INFILTRATION RATES 36

APPENDIX C: CONVERSION FACTORS 37

APPENDIX D: WETLAND CLASSIFICATIONS 38

APPENDIX E: NUMBER OF SOIL BORINGS OR PITS 39

DRAFT

1 INTRODUCTION AND GENERAL PURPOSE

1.1 STATUTORY AUTHORIZATION

These rules are adopted pursuant to:

- Minnesota Statutes Section 103B.201
- Minnesota Statutes Section 103B.231
- Minnesota Statutes Section 103D.201
- Minnesota Statutes Section 103D.335
- Minnesota Statutes Section 103D.341
- MS4 General Permit MNR040000

1.2 FINDINGS

The Coon Creek Watershed District Board of Managers finds that:

1. The watershed's environment is determined by a set of existing natural resources and processes.
2. The primary determinant for management within the watershed is the hydrologic system.
3. The hydrologic cycle is the unifying factor of the natural resource components identified above.
4. Ditches and other watercourses, wetlands and other water bodies, floodplains and groundwater recharge are all integral parts of the hydrologic system of the watershed.
5. Water quality, soils, vegetation, and wildlife are related in that they are affected by or affect the hydrologic system.
6. Land development projects and associated increases in impervious cover alter the hydrologic response of local watersheds and can increase stormwater runoff rates and volumes, flooding, stream channel erosion, and sediment transport and deposition.
7. This stormwater runoff contributes to increased quantities of water-borne pollutants.
8. Stormwater runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of stormwater runoff from development sites through a land management and development approach that minimizes impact on water resources.

The Coon Creek Watershed District has determined that the regulation of stormwater runoff discharges from land development projects and other construction activities is essential to control and minimize increases in stormwater runoff rates and volumes, soil erosion, stream channel erosion, and nonpoint source pollution associated with stormwater runoff, and that regulation is in the public interest and will prevent threats to public health and safety.

Therefore, the Coon Creek Watershed District (District) establishes this set of water quality and quantity policies applicable to all surface waters to provide reasonable guidance for the regulation and management of water for the purpose of protecting local water resources from degradation.

1.3 PURPOSE AND INTENT

Purpose. The Purpose of these rules is to enable the District to evaluate, permit and monitor activities affecting the water and related land resources of the District in an orderly and informed fashion.

Intent. The intent of these rules is to:

1. Manage the watershed's water and related land resources for water quality and biotic integrity and functionality.
2. Prevent public health and safety hazards.
3. Prevent property damage.
4. Promote beneficial uses.
5. Reduce the discharge of pollutants from stormwater to the maximum extent practicable (MEP).
6. Identify waterways, floodplains and wetlands in which land disturbance activity should be restricted, and, in appropriate cases, prohibited.
7. Give due consideration to alternatives and creative solutions in planning and using the water and related land resources of the watershed to encourage and pursue low impact development.

Where no feasible and prudent alternative exists, the use shall be accomplished in a manner which assures the protection and safety of persons and property, public and private and which as nearly as possible:

- Preserves and protects the natural environment; and
- Will not result in the degradation of waterways, floodplains, and wetlands

1.4 RELATION TO GROUNDWATER

The District does not have a section specifically addressing groundwater, but language addressing groundwater issues have been dispersed throughout the rules regarding other topics. For this reason, this section consolidates all the district rules concerning groundwater into one place.

The following bullets represent specific language within the District's rules pertaining to groundwater and details where each is located in the District's rules. These are categorized into groundwater appropriations, volume control, and groundwater quality.

1.4.1 GROUNDWATER APPROPRIATIONS

Groundwater appropriation is not specifically addressed in these rules, however, volume control standards help to maintain groundwater supply and protect groundwater quality.

1.4.2 VOLUME CONTROL

1. To assure control of the rate and volume of stormwater runoff so that surface water and groundwater quantity and quality is protected, soil erosion is minimized, and flooding potential is reduced. (Subsection 3.1.3, 3.3.3)
2. To maintain the present and natural rate of recharge to the surficial aquifer, and when possible, enhance the rate of surcharge. (Subsection 3.1.10, 3.3.3)

1.4.3 GROUNDWATER QUALITY

1. Improve the quality of the surface and subsurface discharges to the lakes and wetlands within the watershed by limiting sediment, nutrients, and other contaminants. (Subsection 3.1.3, 3.3.3.1.a, 3.3.3.2.b, 3.3.4)
2. To protect water and related land resources of the District from the adverse effects resulting from poor or incompatible land use activities. (Subsection 3.1.7)

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2 PROCEDURAL REQUIREMENTS

2.1 PERMIT REQUIRED

Any person undertaking an activity for which a permit is required by these rules must obtain the required permit prior to commencing the activity that is subject to District regulation.

The applicant must coordinate with any other local, State, or Federal agencies to determine if other permits are required for the activity. Application approval may be contingent upon compliance with applicable State and Federal regulations, including obtaining necessary permits.

2.2 TREATMENT TO THE MAXIMUM EXTENT PRACTICABLE

The intent and requirements of this rule to reduce the discharge of pollutants from stormwater must be pursued to the maximum extent practicable (MEP).

A proposed plan/ permit application has reduced the discharge of pollutants to the MEP when the Board finds that the application has made a good faith effort in meeting all of the following requirements:

1. The proposed plan is capable of being done from an engineering point of view.
2. The proposed plan is in accordance with accepted current engineering standards and practices and the Minnesota Stormwater Manual.
3. The proposed plan is consistent with reasonable requirements of the public health safety and welfare.
4. The proposed plan is environmentally preferred based on a review of social, economic, and environmental impacts.
5. The proposed plan creates no unusual problems.

2.3 PRE-APPLICATION MEETING

Prior to applying for approval of a permit required under these rules, an applicant is encouraged to have the application reviewed by the District staff at a pre-application meeting.

2.4 APPLICATION

Any person undertaking any activity for which a permit is required by these rules shall, before commencing work, submit to the District a permit application, engineering design data and such other required information so that the District may determine whether the proposed activity complies with the criteria established by these rules. Application forms and guidance materials may be obtained from the District office or website at https://cooncreekwd.org. Required exhibits are specified for each rule below.

2.5 TIMING OF APPLICATIONS AND BOARD MEETINGS

Complete applications shall be submitted to the District's office in accordance with an annually established schedule prior to the regularly scheduled Board meeting date.

2.6 AUTHORIZATION TO ENTER AND INSPECT PROPERTY

The application for a permit shall be deemed authorization for District staff and representatives to enter and inspect the property that is subject to application.

2.7 FEES AND SECURITY ESCROWS

2.7.1 POLICY

The District finds that it is in the public interest to conserve the District's water resources by assuring compliance with its rules. Requiring applicants to pay fees for permit administration, review, project inspection and to provide a bond or other surety to secure performance of permit conditions, is an effective way to assure rule compliance and water resource conservation.

The Board of Managers by resolution will establish a schedule of fees and performance sureties that may be amended from time to time to reflect the costs of providing such services or covering potential liabilities to the District. The District will maintain an accounting of all deposits made under this rule. No interest will be paid to applicants for funds held in deposit.

2.7.2 FEES

The District will charge ~~the following fees:~~

~~2. Application Fees: Fee charged for processing permit applications~~a ~~.~~

~~3.~~ Review and Inspection Fee~~: Fee charged~~ for the actual cost of review and inspection work performed by District staff and consultants on permit applications.

2.7.3 GOVERNMENT AGENCIES EXEMPT FROM FEES

The above fees will not be charged to the federal government, the State of Minnesota, or a political subdivision of the State of Minnesota.

2.7.4 ESCROWS

The District will collect the following escrows from the applicant before a permit is issued. Escrow amounts and procedures will be periodically reviewed and updated by the Board of Managers.

1. Performance Escrow: Escrow collected to ensure performance of permit requirements.
2. Wetland Escrow: Escrow collected to ensure replacement of mitigated wetlands.

2.8 PERMIT APPLICATION REVIEW PROCEDURE

2.8.1 POLICY

Permit applications shall be submitted by the Watershed District Staff to the Board of Managers for public review in accordance with the standards of these rules.

2.8.2 DETERMINATION OF APPLICATION COMPLETENESS

Within 15 days following receipt of any permit application, the District shall determine whether such application is complete. An application is complete if:

1. All of the information required on the permit application and by these rules has been submitted.
2. The required information is free of significant material errors or omissions such that a determination can be made regarding the application's compliance with the District rules.
3. The applicant or the applicant's agent has made a good faith effort to comply with the rules, regulations, and standards of the District.

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If the District determines that the application is not complete, the applicant shall be notified in writing via a notice of application status specifying the deficiencies of the application. The Board, Administrator and staff may take no further action on the application until the deficiencies are remedied.

2.8.3 NOTICE OF APPLICATION STATUS

Pursuant to determination of an application's incompleteness or Board action the applicant shall be notified of the status of his or her permit application and the requirements for further action or review. The Notice of Permit Application Status shall contain:

1. The name and address of the owner or applicant.
2. The address of the owner or applicant as it appears on the permit application.
3. The Permit Application Number (PAN) given to the project by the District.
4. A statement specifying the action taken by the Board of Managers (Approve, Tabled, Denied) and the date on which that action was taken.
5. A listing of the issues or concerns that led to the Board action.
6. A statement specifying the information, material and or actions which the applicant must provide to the District to proceed with the permit review and potentially obtain a permit.

2.8.4 REMEDY OF DEFICIENCIES

Following receipt of the notice of application deficiencies from the administrator, the applicant shall have 60 days to submit the information requested by the District. The failure of the applicant to submit such information shall be deemed as a withdrawal of the permit application.

2.8.5 BOARD REVIEW AND BOARD ACTIONS

The Board may approve, deny, or table an application. An application will not be ready for Board consideration unless all substantial technical questions have been addressed and all substantial plan revisions resulting from staff review have been accomplished. Permit decisions will be made by the Board except as delegated to the Administrator by written resolution.

2.8.6 STAFF REPORT

Prior to the public review, the staff shall file a staff report with the Board of Managers and make a copy available to the applicant or applicant's contact. The staff report shall include findings and conclusions of the application's consistency with these rules.

2.8.7 PRESENTATION OF INFORMATION

At the public review of the permit application, the District staff shall present information concerning pertinent application considerations and the standards set out in the District's Comprehensive Management Plan, rules and regulations, and associated policy and guidance documents.

2.8.8 RECORD OF REVIEW

The District Administrator shall ensure that the proceedings of the review are recorded. A copy of the review record may be requested of any person upon application to the District and payment of a fee for transcription, or on order of the Board of Managers. The record shall consist of:

1. The portion of the minutes approved by the Board of Managers addressing the application.
2. All applications, exhibits and papers submitted.
3. All staff reports prepared.

2.9 PERMIT TERMS

All permits when issued shall be signed by the District Administrator, District Engineer, ~~or~~ President of the Board, or other assigned individual.

2.9.1 SCOPE

A permit issued by the Coon Creek Watershed District shall be valid for a period of one year from the date of issuance unless otherwise suspended, revoked, or extended. Construction work authorized under this permit shall be completed on or before the permit's expiration date.

2.9.2 EXTENSIONS

A permit issued under these rules may be extended for a period of one year by the District Administrator, provided there has been no significant change in the policies, rules or laws of the State of Minnesota or the Coon Creek Watershed District.

To extend a permit as provided under this section, the permittee must apply to the District in writing prior to the permit expiration date, stating the reasons for extension.

Permit extensions beyond one year are subject to a review of project progress, reasons for the project being incomplete as well as significant changes in the policies, rules or laws of the State of Minnesota or the Coon Creek Watershed District. In such cases the applicant may be required to reapply for a permit.

2.9.3 ASSIGNMENT

A permittee may assign a District permit only upon consent of the Board of Managers to the assignment. Permit assignment does not extend the permit term.

The Board of Managers may grant the assignment of an issued permit if it finds the following conditions have been met:

1. The proposed assignee in writing agrees to assume all the terms, conditions and obligations of the permit as originally issued to the permittee.
2. The proposed assignee is not changing the project as originally issued.
3. There are no violations of the permit conditions as originally issued
4. The District has received from the proposed assignee any required surety to secure performance of the assigned permit.

2.9.4 APPLICABILITY

A permit from the Coon Creek Watershed District applies only to the project and the plans and calculations approved by the Board of Managers and cited on the permit. If the design, location, or purpose of the project changes applicant shall contact the District to make sure the changes would not violate District rules or applicable state law.

2.9.5 CONDITIONS AND STIPULATIONS

Approval of a permit application by the Board of Managers may include certain conditions to be fulfilled to receive a permit, or stipulations to be fulfilled prior to project closeout for the proposed project to be in compliance with these rules.

2.10 GENERAL PERMIT REQUIREMENTS

The following permit conditions are general and are required of land disturbing activities within the District that meet the permitting thresholds of these rules:

1. The permittee must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit.
2. The permittee shall grant access to the site at all reasonable times during and after construction to authorized representatives of the District for inspection of the work authorized hereunder.
3. The permittee shall use best management practices on the project site to minimize the potential for adverse impacts associated with erosion and sedimentation.
4. Permittee shall ensure that the contractor has received and thoroughly understands all conditions of this permit.
5. The District may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
    a. Permittee fails to comply with the terms and conditions of this permit.
    b. The information provided by the permittee or in support of the permit application proves to have been false, incomplete, or inaccurate.
    c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

2.11 PERMIT INSPECTIONS

2.11.1 REGULAR COMPLIANCE INSPECTIONS

Regular inspections of the project site may be conducted by District personnel and authorized representatives. Inspections may occur jointly with other agencies inspecting under other water resource, environmental or safety laws.

2.11.2 SCOPE OF INSPECTIONS

Inspections may include, but are not limited to:

1. Reviewing maintenance and repair records.
2. Sampling discharges.
3. Surface water.
4. Groundwater.
5. Material or water in sediment control practices.
6. Evaluating the condition of erosion and sediment control measures and other stormwater management practices.
7. Surveying elevations.

2.11.3 NOTICE OF INSPECTION

Pursuant to an inspection by District staff, the permittee shall be notified of the findings of the inspection. The Notices of Inspection contain the following information:

1. Date of the inspection.
2. Whether construction, or other land disturbing activities is in compliance with the issued permit, approved plan and/or District rules.
3. Variation from the approved plans or activities.
4. Any violations that exist.

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2.11.4 VIOLATIONS FOUND DURING INSPECTION

If any violations of District rules are found, the permittee and contact shall be notified in writing of the nature of the violation and the required corrective actions. No additional work shall proceed until any violations are corrected and all work previously completed has received approval by the District and the appropriate municipality.

2.12 CLOSE OUT REQUIREMENTS

2.12.1 AS BUILTS

All permittees are required to submit actual "as built" plans for any stormwater management practices or ditch repairs or an improvement located on site after final construction is completed. This includes but is not limited to any changes to the course, current or cross section of a public ditch, wetland mitigation sites and structural stormwater management practices. The plan must show that the final constructed product match the approved project plans for all stormwater management practices and associated structures, wetland mitigation, modification of public ditches, and utility crossings within acceptable tolerance.

2.12.2 INFILTRATION TEST

A post-construction infiltration test must be performed on each infiltration practice in the presence of District staff and must demonstrate that the constructed infiltration rate meets or exceeds the design infiltration rate standard prior to project acceptance by the District. Permittees may be required to mitigate if infiltration rates are found to exceed 8.3 in/hour. ~~The constructed infiltration rate may exceed the design infiltration rate but may not exceed 8.3 inches per hour.~~

2.12.3 FLOODPLAIN MITIGATION DOCUMENTATION

Any project resulting in greater than 50 cubic yards of fill is required to provide an as-built survey upon project completion which documents the location and volume of both fill and compensatory storage.

2.12.4 FINAL INSPECTION

A final inspection of the project by the District is required before release of any escrows can occur.

3 STORMWATER MANAGEMENT

3.1 POLICY

It is the policy of the District:

1. To promote, preserve and enhance the water and related land resources of the District.
2. To preserve and improve the quality of the lakes, wetlands, and watercourses within the watershed.
3. To assure control of the rate and volume of stormwater runoff so that surface water and groundwater quantity and quality is protected, soil erosion is minimized, and flooding potential is reduced.
4. Improve the quality of the surface and subsurface discharges to the lakes and wetlands within the watershed by limiting sediment, nutrients, and other contaminants.
5. To implement the nondegradation requirements of the National Pollutant Discharge Elimination Program (NPDES) using 1988 as the baseline year and load allocation reductions or management

practices noted in District adopted Total Maximum Daily Load (TMDL) and related implementation plans.
6. To implement applicable TMDLs.
7. To protect water and related land resources of the District from the adverse effects resulting from poor or incompatible land use activities.
8. To encourage compatibility between land use activities upstream and downstream and natural resource capacity.
9. To regulate land-disturbing activities affecting the course, current or cross section of ditches and water courses.
10. To regulate improvements by riparian property owners of the bed, banks, and shores of lakes, streams, and wetlands for preservation and beneficial use.
11. To maintain the present and natural rate of recharge to the surficial aquifer, and when possible, enhance the rate of surcharge.

3.2 SCOPE AND APPLICABILITY

This policy, regulation, and standards apply to:

1. Land disturbing activities (not including public linear projects) creating 10,000 sf or more of new or fully reconstructed impervious surface. This threshold is cumulative of all impervious surface created or fully reconstructed through single or multiple phases or connected actions on a single parcel or contiguous parcels of land under common ownership, development, or use.
2. Land disturbing activities (not including public linear projects) creating 5,000 square feet or more of new or fully reconstructed impervious surface for non-residential or multifamily residential development, and any part of the disturbance is within one mile of and draining to an impaired water.
3. Public linear projects where the sum of the new and the fully reconstructed impervious surface equals one or more acres.

3.2.1 COMPREHENSIVE STORMWATER MANAGEMENT PLAN

A municipality or public road authority may prepare a comprehensive stormwater management plan setting forth an alternative means of meeting these standards of sections within a defined subwatershed. Once approved by the District and subject to any stated conditions, the plan will apply in place of that section.

3.2.2 SIDEWALKS AND TRAILS

Rule 3 does not apply to sidewalks and trails 10 feet wide or less that are bordered by down-gradient open space or vegetated filter strip with a minimum of at least 5 feet.

3.3 STANDARDS

An applicant must demonstrate that the proposed land disturbance is designed to meet the standards of this subsection. Applicants should adhere to the design standards set forth in the Minnesota Stormwater Manual and further details maintained on the District's website.

3.3.1 MODELING REQUIREMENTS

A hydrograph method or computer program based on sound hydrologic theory shall be used to analyze runoff and water elevations for the proposed project.

1. The runoff from pervious and impervious areas within the model shall be modeled separately. The SCS Curve Number method must be employed, utilizing Atlas 14 or most current rainfall depths for the site location and the MSE3 rainfall distribution shall be used.
2. In determining Curve Numbers for the post-development condition, the Hydrologic Soil Group (HSG) of areas within construction limits shall be shifted down one classification for HSG C (Curve Number 80) and HSG B (Curve Number 74) and ½ classification for HSG A (Curve Number 49) to account for the impacts of grading on soil structure unless the project specifications incorporate soil amendments in accordance with District Soil Amendment Guidelines. This requirement only applies to that part of a site that is being mass graded as part of proposed project.
3. Model should analyze and show compliance with these requirements at each discharge point.

3.3.2 PEAK RUNOFF RATE

Peak stormwater flow rate at each point of site discharge may not increase from the pre-development condition for the 24-hour precipitation event with a return frequency of 2-, 10-, 100- years.

1. For projects that may impact Drainage-Sensitive Use Areas as identified and mapped by the District, the post-development 100-year peak flow rate shall not exceed predevelopment 25-year peak flow rate.

~~1.~~2. When an existing regional stormwater management practice is proposed to manage stormwater runoff, the applicant shall show that the regional stormwater management practice has capacity to manage the stormwater runoff from the project site using Atlas 14 or most current precipitation modeling standards; the applicant has permission to utilize any remaining capacity in the stormwater management practice; the stormwater management practice is subject to maintenance obligations enforceable by the District; and it is being maintained to its original design.

3.3.3 STORMWATER VOLUME MANAGEMENT

1. For all land disturbances other than public linear projects, the water quality volume equal to 1.1 inch of runoff from new and fully reconstructed impervious surface must be captured and infiltrated or otherwise treated. If a project disturbs more than 50 percent of the site or reconstructs more than 50 percent of the existing impervious surface, these standards apply to all impervious surface on the site. Otherwise, the standards will only apply to new and fully reconstructed impervious surface. For public linear projects, the water quality volume equal to 1 inch from new impervious surfaces or 0.5 inches of runoff from the sum of new and fully reconstructed impervious area, whichever is greater, must be captured and infiltrated or otherwise treated. The allowable infiltration rates by soil type may be found in Appendix B.
2. Volume control stormwater management practices designed consistent with guidance in the MPCA Stormwater Manual or additional standards established by the District must be incorporated into the site design to minimize the creation of new impervious surface and reduce existing impervious surfaces, minimize the amount of directly connected impervious surface, preserve the infiltration capacity of the soil, provide treatment for water quality, and limit increases in runoff volume exiting the site to the extent feasible considering site-specific conditions.

    a. Pretreatment. An infiltration or filtration practice must be designed and maintained so that ~~particulates settle~~80 percent TSS is removed before the stormwater discharges into the infiltration or filtration portion of the system. A pretreatment device such as a vegetated filter strip, small sedimentation basin, or water quality inlet (e.g., grit chamber) must be included in the design and sized according to MPCA Stormwater Manual guidance. ~~The use of manufactured treatment devices must be supported by data sufficient to document that the device removes at least 80% TSS.~~

b. Infiltration may not be used as a volume control practice when the system would be constructed in areas:
   i. that receive discharges from vehicle fueling and maintenance areas.
   ii. containing contaminated soil or groundwater.
   iii. where soil infiltration rates are more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour.
   iv. with less than three feet of separation from the bottom of the infiltration system to the seasonally saturated soils or the top of bedrock.
   v. of predominately Hydrologic Soil Group D (clay) soils.
   vi. in an Emergency Response Area (ERA) within a Drinking Water Supply Management Area (DWSMA).
   vii. outside of an ERA within a DWSMA classified as high or very high vulnerability.
   viii. that receive stormwater runoff from: automobile salvage yards; scrap recycling and waste recycling facilities; hazardous waste treatment, storage, or disposal facilities; or air transportation facilities that conduct deicing activities.
   ix. Within 1000 feet upgradient of 100 feet down gradient of active Karst features.

c. ~~If a stormwater management practice depends on the hydrologic properties of soils (e.g., infiltration basins), then a soils report shall be submitted. The soils report shall be based on on-site boring logs or soil pit profiles. The number and location of required soil borings or soil pits shall be determined based on what is needed to determine the suitability and distribution of soil types present at the location of the control measure.~~

~~c.~~d. For applications proposing infiltration, pre-construction field evaluation of soil infiltration rates in accordance with ASTM 3385 for double ring infiltrometer testing or other approved method is highly encouraged.

~~d.~~e. If the volume standard is not fully met by a volume reduction practice, other stormwater management practices must be used to provide the remaining volume equivalent, using the volume conversion factors found in Appendix C. For alternative practices not found in the Appendix or to deviate from a volume conversion factor, the applicant may submit a volume conversion factor, expressed as annual percentage removal efficiency, with supporting technical data, for District approval.

~~e.~~f. If regulatory, hydrologic, topographic or landscape conditions (e.g. drainage sensitive uses, TMDL or nondegradation requirements) warrant greater control than that provided by the minimum control requirements, the District reserves the right to impose additional requirements deemed necessary to control the volume, timing and rate of runoff.

3. For single-family residential development, the runoff from impervious surface other than parking or driving surface that, in the District's judgment, cannot reasonably be routed to a stormwater management practice is considered effectively treated for water quality if:
   a. The length of the flow path across the impervious surface is less than the length of the flow path across the pervious surface to which it discharges; and
   b. The pervious surface is vegetated and has an average slope of five percent or less.

3.3.4 WATER QUALITY

The following water quality standards apply:

1. The water quality volume required by section 3.3.3 of these rules must be captured and treated for total phosphorus using a stormwater management practice listed in Appendix C.
2. Runoff from existing, undisturbed impervious surface that is not being treated prior to the same receiving water and not~~or~~ required to be treated by section 3.3.3 may be treated in-kind for new or fully reconstructed impervious surface~~. Except for Public Linear projects, the in-kind area may~~ not to exceed 15 percent of the proposed new or fully reconstructed impervious surface. Public linear projects are not limited to the maximum 15 percent.

3. For all untreated surface subject to regulation under this rule, TSS must be removed to the maximum extent practicable.
4. Total water quality volume for the project must be provided in aggregate pursuant to subsection 3.3.3. For Public Linear Projects, water quality treatment volume for fully reconstructed impervious surface, if required by section 3.3.3, must be provided only to the extent feasible.
5. Provide stormwater treatment practices to remove 80% of the average annual post development total suspended solids (TSS) per discharge location unless otherwise specified by a TMDL or nondegradation requirement.
6. Stormwater discharges to critical areas with sensitive resources or where a TMDL is in place may be subject to additional performance standards or may need to utilize or restrict certain stormwater management practices.
7. For public linear projects, where the entire water quality volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, the applicant must maximize the treatment of the water quality volume prior to discharge from the District.
8. For non-linear projects, where the full water quality volume cannot cost effectively be treated on the site of the original construction activity, the applicant must identify locations where off-site treatment projects can be completed. If the entire water quality volume is not addressed on site, the remaining water quality volume must be addressed through off-site treatment in accordance with the following:
    a. Off-site treatment areas are selected in the following order of preference:
        i. locations that yield benefits to the same receiving water that receives runoff from the original construction activity;
        ii. locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity;
        iii. locations in the next adjacent DNR catchment area up-stream; or
        iv. locations anywhere within the District.
    b. Off-site treatment must involve the creation of new structural stormwater management practices or the retrofit of existing structural stormwater management practices, or the use of a properly designed structural stormwater management practice which has the capacity to treat the remaining water quality volume.
    c. Off-site treatment projects must be completed no later than 24 months after the start of the original construction activity.

3.3.5 DISCHARGES INTO WETLANDS

1. ~~Discharges into wetlands~~Activity subject to this rule ~~should~~ must not cause extreme fluctuations of water levels. ~~Discharges that exceed the standards below shall be considered and regulated as adverse impact.~~ Bounce in water level, duration of inundation, and runout elevation must not deviate from the standards shown in the table below for any wetlands in which surface hydrology is altered as a result of the project. Mixed type wetlands must conform with the most restrictive standard. Wetland susceptibility classifications can be found in Appendix D.

Wetland Type Standard	**Highly Susceptible**	**Moderately Susceptible**	**Slightly Susceptible**	**Least Susceptible**
Storm Bounce (2- & 10-year event)	Existing	Existing + 0.5 ft	Existing + 1 ft	No limit
~~Discharge Rate~~	~~Existing~~	~~Existing~~	~~Existing or less~~	~~Existing or less~~

Inundation Period on 1- & 2-year event	Existing	Existing + 1 day	Existing + 2 days	Existing + 7 days
Inundation Period on 10-year event and greater	Existing	Existing + 7 days	Existing + 14 days	Existing + 21 days
Run out control	No change	No change	0'-1 ft above RO	0-4 ft above RO

2. Stormwater must be treated to achieve at least 80% annual removal efficiency for total suspended solids (TSS) prior to discharging into a wetland.

~~**3.3.6 LANDLOCKED BASINS**~~

~~If a drainage system is proposed to outlet to a landlocked basin, sufficient storage volume must be provided to retain back-to-back 100-year, twenty-four- hour rainfalls and runoff.~~

~~3.3.8~~3.3.6 LOW FLOOR FREEBOARD

For activity subject to this rule that may impact new or existing ~~New development including buildings and~~ habitable structures, ~~and~~ stormwater management practices shall be constructed such that the lowest basement floor elevations are at least 2 feet above the 100-year high water level and~~or~~ 1 foot above the emergency overflow.

Basins that are landlocked must provide sufficient storage volume to retain back-to-back 100-year, twenty-four-hour rainfall runoff. Landlocked basins must be constructed such that the lowest basement floor elevations are at least 2 feet above the back-to-back 100-year high water level.

If such vertical separation cannot be achieved, an alternate calculation method based on Darcy's Law may be used to evaluate groundwater seepage effects. Such method may be approved if the applicant provides sufficient site-specific hydrologic and geotechnical data demonstrating that the proposed calculation is appropriate and provides evidence that groundwater seepage will not impact applicable low floors.

The freeboard criteria may be deemed met when the structure does not have the required vertical separation but is protected from surface flooding to the required elevation by a berm or other natural or constructed topographic feature capable of providing flood protection.

3.4 SUBMITTALS

The applicant must submit the following with its permit application:

1. A construction plan set referenced to the NAVD 1988 or most recent datum that includes:
    a. Existing site conditions.
    b. Proposed site conditions, including grading, structures, utilities, roads, and easements.
    c. Water features, including delineated wetland boundaries and floodplain where appropriate.
    d. Stormwater management practice design details.
    e. Preliminary plat of any proposed subdivision.
    f. Ditch easements.
2. Calculations: Hydrologic and hydraulic design calculations for the pre-development and post-development conditions for the design storms specified in this rule at each discharge point from the project. Such calculations shall include:

a. Description of the design storm frequency, intensity, and duration.
b. Time of concentration.
c. Use of the SCS Curve Number method.~~Soil Curve Numbers or runoff coefficients.~~
d. Peak runoff rates and total runoff volumes for each discharge point.
e. Infiltration rates.
f. Culvert capacities.
g. Flow velocities.
~~g.~~h. Documentation of 80 percent TSS removal at each discharge point from the project site and pretreatment methods, as applicable.
~~h.~~i. Identification of existing and proposed drainage areas for each wetland basin, if applicable and the bounce and duration for existing and~~all~~ proposed stormwater discharges.
~~i.~~j. Documentation of sources for all computation methods and field test results.
~~j.~~k. Demonstrate concurrence with regional pond or subdivision drainage plans approved by the District, if applicable.

3. Soils Information: ~~If a stormwater management practice depends on the hydrologic properties of soils (e.g., infiltration basins), then a~~A soils report shall be submitted. The soils report shall be based on on-site boring logs or soil pit profiles. The number and location of required soil borings or soil pits shall be determined based on ~~MPCA guidance, also~~the table provided in Appendix E. Boring logs must be referenced to the NAVD 1988 or most recent datum. Soil borings or pits submitted as part of the soils report must have been completed within the last 5 years. It is recommended to identify the elevation of seasonally saturated soils in areas of proposed infiltration to verify separation from the bottom of an infiltration practice.

~~3.~~4. If infiltration practices are proposed to meet the requirements of this rule, a contaminated soils assessment checklist or Phase 1 Environmental Site Assessment must be submitted. ~~If contaminated soils are present, a contaminated soils assessment must also be submitted.~~

~~4.~~5. Maintenance Plan: A maintenance plan must be submitted for all stormwater practices and associated structures required under these rules, and subject to a Maintenance Agreement per section 3.5.2, to ensure their continued function. This plan must include at a minimum:
a. The parts or components of a stormwater management practice that need to be maintained.
b. Detailed maintenance and repair procedures to ensure continued function of the stormwater management practice.
c. An inspection and maintenance schedule.
d. Responsible parties for inspection and maintenance.
e. Equipment and skills or training necessary.
f. Provisions for the periodic review and evaluation of the effectiveness of the maintenance program.
g. Need for revisions or additional maintenance procedures.

~~5.~~6. Landscaping Plan: The applicant must present a detailed plan for management of vegetation at the site after construction is finished, including:
a. The party(ies) responsible for the maintenance of vegetation at the site.
b. The practices that will be employed to ensure that adequate vegetative cover is ~~preserved~~established, including within vegetated stormwater BMPs.

3.5 MAINTENANCE REQUIREMENTS

3.5.1 MAINTENANCE EASEMENTS

1. The applicant must ensure access to all stormwater treatment practices at the site for the purpose of inspection and repair by securing all the maintenance easements needed on a permanent basis. These easements will be recorded with the plan and will remain in effect even with transfer of title to the property.

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2. The applicant must dedicate maintenance easements on all new plats and developments on public ditches as follows:
    a. A 200-foot easement (100 feet either side of centerline) will be required on Coon Creek from the Mississippi River to Lexington Ave. (C.S.A.H. #17).
    b. A 200-foot easement (100 feet either side of centerline) on Sand Creek from Coon Creek to Central Ave. (T.H. #65).
    c. A 100-foot easement (50 feet either side of centerline) on designated county ditches within the watershed, including Coon Creek and Sand Creek upstream of the sections identified in a & b of this section, and Riverview, Pleasure, Springbrook, Stonybrook, and Oak Glen Creeks.

3.5.2 MAINTENANCE AGREEMENT

A maintenance agreement is required for all stormwater practices that will not be maintained as part of standard municipal public work activities. The maintenance agreement must include the elements required in the maintenance plan cited in section 3.4 of these rules.

The applicant must record the maintenance agreement with the county recorder/registrar before any land-altering activity occurs on the site. Applicant/permittee must then provide the District a copy of the recorded document.

If a responsible party fails or refuses to meet the requirements of the maintenance agreement, the District, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing necessary work to place the facility in proper working condition and charge the responsible party.

3.5.3 MAINTENANCE INSPECTIONS

For all stormwater practices that will not be maintained as part of standard municipal public work activities, the responsible parties for maintenance shall inspect all stormwater management practices under their jurisdiction by July 30 of each year. The purpose of the inspection will be to document maintenance and repair needs and ensure compliance with the requirements of this rule and accomplishment of its purposes.

These maintenance and repair needs may include removal of silt, litter and other debris from all catch basins, inlets and drainage pipes, grass cutting and vegetation removal, and necessary replacement of landscape vegetation. Any maintenance needs found must be addressed in a timely manner, as determined by the District, and the inspection and maintenance requirement may be increased as deemed necessary to ensure proper functioning of the stormwater management facility.

3.5.4 RECORDS OF INSTALLATION AND MAINTENANCE ACTIVITIES

Parties responsible for the operation and maintenance of a stormwater management practice shall make records of the installation and of all maintenance and repairs and shall retain the records for at least five years. These records shall be made available to the District during inspection of the facility and at other reasonable times upon request.

4 SOILS AND EROSION CONTROL

4.1 POLICY

It is the policy of the District:

1. To reduce the siltation into, and the pollution of water bodies and streams.
2. To guide, regulate and control the design, construction, use and maintenance of development to promote water quality and prevent pollution.
3. To control and minimize pollution caused by erosion and sedimentation.
4. To reduce siltation to, and the pollution of, water bodies and streams.

4.2 SCOPE AND APPLICABILITY

This policy, regulation and standards apply to:

1. Land disturbing activities or removal of vegetative cover on lands of 1 acre or more of cumulative disturbance.
2. Land disturbing activities or removal of vegetative cover on 10,000 square feet or more of cumulative disturbance, if any part of the disturbed area is within 300 feet of and drains to a waterbody.
3. Land disturbing activities or removal of vegetative cover on 5,000 square feet if any part of the disturbed area is within 50 feet of and drains to a waterbody.
4. Any other land disturbing activity that requires a permit under any other District rule.

4.2.1 EXCEPTIONS

The following land-disturbing activities are excepted from these requirements:

1. Any emergency activity that is immediately necessary for the protection of life, property, or natural resources.
2. Existing nursery or agricultural operations conducted as a permitted main or accessory use.

4.3 STANDARDS

An applicant for an erosion and sediment control permit must demonstrate compliance with the following standards:

1. The applicant must prepare and receive District approval of an Erosion and Sediment Control Plan that meets the following criteria:
    a. The erosion and sediment control practices shall be consistent with the specifications of the MPCA manual "Protecting Water Quality in Urban Areas," as amended, and the specifications of the NPDES/SDS Construction Stormwater General Permit, as amended.
    b. Erosion and sediment control practices shall be sufficient to retain sediment on site.
    ~~c. Soils with a soil erodibility factor of 0.15 or greater must be stabilized within 24 hours.~~
    ~~d.~~c. Permanent or temporary stabilization of disturbed areas must be initiated immediately when construction activity has permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding 7 days. ~~and be fully stabilized~~ Stabilization must be completed no later than~~within~~ 7 days after construction activity has ~~permanently or temporarily~~ ceased.
    ~~e.~~d. The plan must include practices adequate to protect stormwater management practices to be used for post-construction stormwater infiltration or filtration.
2. All erosion and sediment controls proposed for compliance must be in place before any land-disturbing activity begins.
3. While land disturbing activity is in progress, the approved Erosion and Sediment Control Plan must be followed. Erosion and Sediment Control measures in place must be maintained and repaired in accordance with the plan. Additional or alternative measures may be required based on actual site conditions.

~~2.~~4. Temporary sediment control measures must remain in place until the site is permanently stabilized with at least 70 percent uniform density of expected vegetation.

4.4 SUBMITTALS

The applicant must submit with its permit application the following:

1. A topographic map including existing and proposed grades, soils, forest cover, hydrologic features and other resources protected under other provisions of this rule, city rule or state statute, and clear identification of areas where grading will occur or soils will be exposed by removal of vegetative cover. This must also include a quantification of the total area of land disturbance.
2. A sequence of construction of the development site, including clearing and grubbing, rough grading, construction of utilities, infrastructure, and buildings; and final grading and landscaping. Sequencing shall identify the expected date on which clearing will begin and the duration of exposure of cleared areas, areas of clearing, installation of temporary erosion and sediment control measures, and establishment of permanent vegetation.
3. Clear identification of all temporary erosion and sediment control measures which will remain in place until permanent vegetation or other permanent stabilization is established.
4. Clear identification of all permanent erosion control measures such as outfall spillways and riprap.
5. Clear identification of staging areas, as applicable.
6. Identification and location of any floodplain or wetland area. A delineation may be required depending on the proximity of the proposed disturbance to a wetland.
7. Identification of proposed dewatering and basin-draining activities, and provisions for treating discharge for sediment, oil, and grease in accordance with the MPCA Construction Stormwater General Permit Dewatering and Basin Draining section.
8. Seeding mixtures and rates, types of sod, method of seed bed preparation, expected seeding dates, type and rate of fertilizer application, and kind and quantity of mulching for both temporary and permanent vegetative control measures.
9. Provisions for maintenance of control practices, including easements and estimates of the cost of maintenance. Identification of and contact information for the party responsible for the maintenance of all erosion and sediment control practices must be included.
10. Provisions for permanent stabilization of the site after construction, including identification of and contact information for the party responsible for the maintenance of vegetation at the site, and what practices will be employed to ensure that adequate vegetative cover is preserved.
11. Documentation that the project applicant has applied for the NPDES Permit from the Minnesota Pollution Control Agency (MPCA), when applicable.
12. A Stormwater Pollution Prevention Plan for projects that require an NPDES Permit.

5 WETLANDS

5.1 POLICY

It is the policy of the District:

1. To provide for the protection, preservation, proper maintenance and use of wetlands.
2. To minimize the disturbance to wetlands and to prevent damage from excessive sedimentation, eutrophication, or pollution.
3. To protect and enhance the ecological function of wetlands and the benefits and values they provide to society.

5.2 SCOPE AND APPLICABILITY

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This policy, regulation and standards apply to:

1. Activities which result in the filling, draining, excavating, or otherwise altering the hydrology of a wetland.

5.3 STANDARDS

The Minnesota Wetland Conservation Act (WCA), as amended, and its implementing rules contained in Minnesota Rules Chapter 8420, as amended, are incorporated as part of this rule and govern all draining, filling, and excavating in wetlands.

Any person proposing to impact a wetland in the District is subject to and must establish compliance with the Wetland Conservation Act, as amended, standards and criteria, including but not limited to sequencing and replacement.

5.3.1 STORMWATER DISCHARGE

Stormwater drainage may be discharged to wetlands provided treatment of said discharge as noted in Section 3.3.5 is accomplished. Diversion of stormwater to wetlands shall be considered for existing or planned surface drainage provided such diversion is in compliance with state law and all necessary easements have been obtained.

5.3.2 PROHIBITED ACTIVITIES

Within area(s) delineated as wetland, the applicant and property owner shall not:

1. Fill or place materials, substances, or other objects, nor erect or construct any type of structure, temporary or permanent, except as specified in the Wetland Conservation Act.
2. Drain or cause to be drained through ditching pumping or alteration of the wetlands water source or actions which adversely change the wetlands hydroperiod such that the wetland can become non-wetland, except as specified in the Wetland Conservation Act.
3. Excavate or dig except as specified in the Wetland Conservation Act.
4. Clear vegetation, pond water or alter the landscape position in a manner that results in adverse environmental impact.

5.4 SUBMITTALS

The applicant must submit with its permit application the following:

1. A site plan showing property lines and delineation of lands in which the applicant has an ownership or legal interest; existing and proposed elevation contours, including existing runout elevation and flow capacity of the wetland outlet; and area of the wetland proposed to be filled, drained, or excavated.
2. A complete delineation of all existing wetland(s), including data sheets with complete and detailed information on field indicators (soils, vegetation, and hydrology) and summary report. Wetland delineations must be performed during the growing season. Wetland boundaries must be staked in the field and easily identifiable.
3. The total wetland acres, wetland types and number of jurisdictional wetland basins on the property.
4. The size and nature of proposed impact to each wetland and the reason the impact is unavoidable shall be identified.
5. The wetland dependence of each proposed impact of the project shall be determined.

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6. The nature and scope of the appropriate Wetland Conservation Act exemption shall be noted if applicable.
7. Alternatives to avoid and minimize each proposed impact.

6 FLOODPLAIN

6.1 POLICY

It is the policy of the District:

1. To secure safety from floods.
2. To prevent loss of life, property damage, and the losses and risks associated with flood conditions.
3. To preserve the location, character, and extent of natural drainage courses.
4. To preserve the natural integrity of drainage patterns.
5. To provide a storm and surface water system capable of handling a 100-year storm.

6.2 SCOPE AND APPLICABILITY

This policy, regulation, and standards apply to:

1. Land disturbing activities within the floodplain as mapped and modeled by the District, as amended.

6.3 STANDARDS

1. The existence of floodplain on the property must be determined.
2. Proposed floodplain impacts must be identified and quantified.
3. Fill within the floodplain is prohibited unless compensatory storage volume is provided within the relevant reach and in the same permit term. Compensatory storage must be provided such that the floodplain storage volume after encroachment is equal to or greater than the floodplain storage volume prior to encroachment.
4. Proposed projects that affect the conveyance capacity of channels or crossings shall document that equivalent hydraulic capacity is provided. When hydraulic equivalents are not desired or feasible for the proposed project, the District will review hydraulic information prepared by the applicant which details easement acquisition or permission for increased flood levels (upstream or downstream of the project), emergency overflow elevations, and assessment of the adequacy of the outlet as generally described in M.S. 103E.
5. Construction or development subject to flood damage must have a minimum floor elevation of at least 2 feet above the 100-year floodplain.
6. Any structures or embankments within the floodplain shall be capable of passing the 100-year flood without increasing the elevation of the floodplain or creating excessive velocities as determined by the District.
7. A one-time deposition of floodplain fill that is less than 50 cubic yards does not require compensatory storage. This standard applies per parcel, or on a per project, per floodplain basis for public linear projects.

6.4 SUBMITTALS

The applicant must submit the following with its permit application:

1. Site plan showing boundary lines, delineation and existing elevation contours of the work area, ordinary high water level, and floodplain. All elevations shall be referenced to NAVD ~~(~~1988 or most recent datum~~)~~.
2. Grading plan showing any proposed elevation changes.
3. Preliminary plat of any proposed subdivision.
4. Determination by a registered professional engineer of the floodplain elevation before and after the proposed activity, if required.
5. Computation of the change in flood storage capacity as a result of the proposed alteration or fill.
6. Erosion and sediment control plan which complies with these rules.
7. Soil boring logs and report if available or other data documenting the local groundwater elevation.

7 DRAINAGE, BRIDGES, CULVERTS, AND UTILITY CROSSINGS

7.1 POLICY

It is the policy of the District to:

1. Maintain ditch and conveyance systems within the watershed to fulfill the role identified within the District's Comprehensive Management Plan and Minnesota Statutes Chapter 103E.
2. Promote, preserve, and enhance the water and related land resources of the District.
3. Protect the water and related land resources of the District from the adverse effects resulting from poor or incompatible land use activities.
4. Encourage compatibility between land use activities upstream and downstream.
5. Regulate land-disturbing activities affecting the course, current, cross section and quality of ditches and water courses.
6. Regulate improvements by riparian property owners of the bed, banks, and shores of lakes, streams, and wetlands for preservation and beneficial use.
7. Protect stream channels from degradation.
8. Regulate crossings of ditches and watercourses in the District to maintain channel profile stability and conveyance capacity.

7.2 SCOPE AND APPLICABILITY

This permit requirement is in addition to any procedures that may be required for public ditches under Minnesota Statutes 103E or other applicable ditch law.

This policy, regulation and standards apply to:

1. All land disturbing activities which construct, improve, repair, or alter the hydraulic characteristics of a bridge profile control or culvert structure on a creek, public ditch, or major watercourse.
2. Land disturbing activities which involve a pipeline or utility crossing of a creek, public ditch, or major watercourse.
3. All land disturbing activities which construct, improve, repair or alter the hydraulic characteristics of a ~~conveyance~~ private ditch system that extends across two or more parcels of record not under common ownership and has a drainage area of 200 acres or greater, including by placing or altering a utility, bridge or culvert structure within such a system. No permit is required to repair or replace an element within~~of~~ a private ~~conveyance~~ ditch system owned by a government entity when the hydraulic capacity of the system will not change.

7.3 STANDARDS

1. Every person owning property through which a ditch or watercourse passes, or such person's lessee, shall keep and maintain that part of the ditch or watercourse within the property, free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, obstruct, or significantly retard the flow of water, or access for maintenance or repair of the ditch or other watercourse.
2. The owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.
3. The natural drainage system shall be used as far as is feasible for storage and flow of runoff. Stormwater drainage may be discharged to wetlands, retention basins or other treatment practices. Temporary storage areas or retention basins scattered throughout developed areas shall be encouraged to reduce peak flow, erosion damage, and construction cost.
4. The widths of a constructed waterway shall be sufficiently large to adequately channel runoff from a ten (10) year storm. Adequacy shall be determined by the expected runoff when full development of the drainage area is reached.
5. No fences or structures shall be constructed across the waterway that will reduce or restrict the flow of water.
6. The banks of the waterway shall be protected with permanent vegetation.
7. The gradient of the waterway bed should not exceed a grade that will result in a velocity that will cause erosion of the banks of the waterway.
8. Prior to realignment or repair, alternative measures to conserve, allocate and use the water should be considered (versus removing it from the area and watershed.) The need for repair of the ditch or watercourse shall be determined.
9. Water inlets, culvert openings and bridge approaches shall have adequate shoulder and bank protection to minimize soil erosion.
10. Bridge and culvert crossings must:
    a. Provide equivalent hydraulic capacity as existing condition.
    b. Retain existing navigational capacity.
    c. Not adversely affect water quality.
    d. Represent the minimal impact solution to a specific need with respect to all other alternatives.
    e. Be constructed to allow for future erosion, scour and sedimentation considerations.
    f. Provide for biota passage consistent with MnDOT's Minnesota Guide for Stream Connectivity and Aquatic Organism Passage Through Culverts.
11. All placement or replacement of pipelines or utility lines that cross ditches or waterways of the District shall be placed so that the top elevation is at least 4 feet below approved low elevation of ditch or waterway in order to avoid or minimize damage to the line during maintenance or repair of the ditch. This elevation is to be provided by the District.
12. Comply with all federal, state and District wetland protection rules and regulations.

7.4 SUBMITTALS

The applicant must submit the following with its permit application:

1. For construction, improvement, or repair of a public or private drainage system:
    a. Map showing section of the ditch or drainage system to be maintained.
    b. Depth, in feet, proposed to be dredged.
    c. Plan for placement of dredge material.
    d. Plan for final vegetative cover of dredge. Evidence that the affected property owners have been contacted and will allow access for maintenance purposes.
    e. Construction schedule.
    f. Narrative describing construction methods.
    g. An erosion control plan that complies with these rules.

2. For construction, improvement or repair of bridges, culverts and crossings:
    a. Plans and details showing:
        i. Existing and proposed flow line (invert) elevations.
        ii. End details with flared end sections, wingwalls and/or riprap (energy dissipators).
        iii. Size and description of structure.
        iv. Emergency overflow elevation and route.
        v. Separation of four (4) feet from bottom of approved low elevation of ditch or waterway to top of utility crossing.
    b. Construction schedule.
    c. Narrative describing construction methods.
    d. An erosion control plan that complies with these rules.
    e. Discussion of potential effects on water levels upstream and downstream of the project area and computations of watershed area, peak flow rates and elevations if required.

8 BUFFERS

8.1 POLICY

It is the policy of the District to:

1. Protect State water resources from erosion and runoff pollution.
2. Stabilize soils, shores, and banks.
3. Protect and provide riparian corridors.
4. Address management of the "Additional Waters" provision of M.S. 103F.48 and identified by the Anoka Conservation District criteria in 2017.
5. Address management of riparian lands of high or outstanding ecological value.

8.2 APPLICABILITY AND SCOPE

This policy, regulation, and standards apply to:

1. Any land disturbing activity that requires a permit under any other District rule and any part of the disturbed area is adjacent to one of the following water resources:
    a. Public Waters as defined under M.S. 103G
    b. Waters determined as "Additional" under M.S. 103F.48
    c. High or Outstanding Ecological Value Waters
    d. Public ditch proposed to be improved under M.S. 103E.215 by being deepened or widened from the constructed condition.
    e. Impaired waters or waters exceeding state water quality standards.

~~e.~~2. Standards do not apply to linear projects or projects that only consist of grading activities.

8.3 STANDARDS

1. Continuous vegetated buffers must be established and maintained in perennially rooted vegetation.
2. Buffer Width Requirements

Water Resource Type	Minimum Width (ft)	Average Width (ft)
Public Water (under M.S. 103G)	30	50

"Other" Waters (under M.S. 103F.48)	16.5	16.5
Public ditch improvement	16.5	16.5
High or Outstanding Ecological Value Waters and Impaired Or Exceeding Waters:		
Type 3, 4, or 5 wetlands; Lakes; Watercourses of stream order 3,4,5	15	25
Type 1, 2, 6, 7 or 8 wetlands; Watercourses of stream order 1, 2.	10	15

9. The buffer width must be measured from the top or crown of the bank. Where there is no defined bank, measurement must be from the edge of the normal water level. For wetlands, the measurement must be from an approved delineated boundary.
10. The buffer will be considered compliant if it, on average, meets the applicable average buffer width requirement, and is no less than the listed minimum width at any point. Only buffer up to 200 percent of the average width will be counted in determining average buffer.
11. When more than one water resource type is present, the most protective buffer will apply.
12. Buffers shall be identified within each parcel by permanent monumentation at each parcel line where it crosses a buffer strip and shall have a maximum spacing of 200 feet along the edge of the buffer. Buffer monuments shall be approved by the District.

8.4 SUBMITTALS

The applicant must submit the following with its permit application:

1. Plans and details showing:
    a. Applicable water resources.
    b. The proposed buffer area with averaging calculations if necessary.
    c. Placement of permanent buffer monuments.
    d. Proposed design and text for permanent buffer monuments.

9 ILLICIT DISCHARGE

9.1 ILLICIT DISCHARGE PROHIBITION

No person shall discharge or cause to be discharged into the drainage system, storm drain system or watercourses of the District any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than stormwater.

1. The following discharges are exempt from discharge prohibitions established by this rule:
    a. Water line flushing or other potable water sources.
    b. Landscape irrigation or lawn watering.
    c. Diverted stream flows.
    d. Rising ground water.
    e. Uncontaminated groundwater infiltration to storm drains.
    f. Uncontaminated pumped ground water.
    g. Foundation and footing drains.
    h. Firefighting activities.
    i. Air conditioning condensation.

j. Springs.
k. Water from crawl space pumps.
l. Individual residential car washing.
m. Flows from riparian habitats and wetlands.
n. Dechlorinated swimming pool discharges.
o. Street wash water.
p. Other water sources not containing pollutants.

2. Discharges specified in writing by the District, or other federal, state, or local agency as being necessary to protect the public health and safety.
3. Dye testing is an allowable discharge but requires a verbal notification to the District prior to the time of the test.
4. The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

9.2 ILLICIT CONNECTIONS PROHIBITED

1. The construction, use, maintenance, or continued existence of illicit connections to the public drainage system is prohibited.
2. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.
3. A person is considered to be in violation of this rule if the person connects a line conveying sewage to the public drainage system, or allows such a connection to continue.

10 WAIVERS AND VARIANCES

10.1 WAIVERS

The District Board or Administrator may grant a waiver from the District requirements of this rule in whole or in part upon written request of the applicant, provided that at least one of the following conditions applies:

1. It can be demonstrated that the proposed project is not likely to impair attainment of the purpose and intent of this rule.
2. Alternative minimum requirements for on-site management of water and related land resources have been established in a plan that has been approved by the District and the implementation of the plan is required by local ordinance.
3. Provisions are made to manage stormwater by an off-site facility, such as a regional pond or wetland bank. The off-site facility is required to:
    a. Be in place.
    b. Be designed and adequately sized to provide a level of control that is equal to or greater than that which would be afforded by on-site practices.
    c. Have a legally obligated entity responsible for long-term operation and maintenance of the stormwater practice.
4. The District finds that meeting the minimum on-site management requirements is not feasible due to the natural or existing physical characteristics of a site.

10.2 VARIANCES

The Board of Managers may grant a variance from the literal provisions of the District's rules, regulations, and policies where:

1. The strict enforcement of the rules would cause undue hardship because of circumstances unique to the property under consideration.
2. It is demonstrated that such action will be in keeping with the spirit and intent of the District rules, regulations, and policies.
3. The proposed activity for which the variance is sought will not adversely affect the public health, safety, or welfare.

10.2.1 TERM

A variance will expire on expiration of the District's approval or permit associated with the variance request.

10.2.2 VIOLATIONS

A violation of any condition set forth in a variance will be a violation of the District rules and will automatically terminate the variance.

10.2.3 CONDITIONS

The Board of Managers may require as a condition of the waiver, or variance:

1. Such dedication or construction, or agreement to dedicate or construct as may be necessary to adequately meet said standards and requirements.
2. An alternative analysis that clearly demonstrates that no other feasible alternatives exist, and that minimal impact will occur as a result of the project or development.
3. Site design, landscape planting, fencing, signs, and water quality best management practices to reduce adverse impacts on water quality, streams, wetlands, and floodplains.

11 ENFORCEMENT AND PENALTIES

11.1 VIOLATIONS

A violation of these rules is a misdemeanor subject to the penalties as provided by Minnesota law.

11.2 NOTICE OF VIOLATION

When the District determines that an activity is **not** being carried out in accordance with the requirements of these rules, the District shall issue a written 'Notice of Violation' to the owner of the property or permittee. The notice of violation shall contain:

1. The name and address of the owner or applicant.
2. The address when available or a description of the land upon which the violation is occurring.
3. A statement specifying the nature of the violation.
4. A description of the remedial measures necessary to bring the activity into compliance with this rule and a time schedule for the completion of such remedial action.
5. A statement of penalty that may be assessed.

11.3 REMEDIAL METHODS

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Remedial measures required to bring an activity into compliance may require without limitation:

1. The performance of monitoring, analysis, and reporting.
2. The elimination of illicit connections and discharges.
3. That violating discharges, practices, or operations shall cease and desist.
4. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property.
5. The implementation of source control or treatment BMPs.

11.4 APPEAL OF NOTICE OF VIOLATION

A Notice of Violation may be appealed to the District by filing a written notice of appeal within 15 days of service. Hearing of the appeal before the Board of Managers shall take place at the next regularly scheduled Board meeting that is at least 13 days from the date of receipt of the notice of appeal

11.5 STOP WORK ORDERS

The District may issue a Stop Work Order when it finds that a proposed or initiated activity or project presents a serious threat of soil erosion, sedimentation, or an adverse effect upon water quality or quantity, or violates any District rule or permit condition. Persons receiving such an order will be required to halt all construction activities. This "stop work order" will be in effect until the District confirms that the activity is in compliance and the violation has been satisfactorily addressed.

11.6 RESTORATION OF LANDS

Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the District may take necessary corrective actions, the cost of which shall be paid by the responsible party.

11.7 ATTORNEY FEES AND COSTS

In any civil action arising from or related to these rules, an order, agreement, permit issued or denied by the District, the court may award the prevailing party reasonable attorney fees and costs.

12 ADOPTION OF RULE

12.1 SEVERABILITY

If the provisions of any article, section, subsection, paragraph, subdivision, or clause of this rule shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any article, section, subsection, paragraph, subdivision, or clause of this rule.

Compatibility with Other Requirements

This rule is not intended to interfere with, abrogate, or annul any other ordinance, rule or regulation, statute, or other provision of law. The requirements of this rule should be considered minimum requirements, and where any provision of this rule imposes restrictions different from those imposed by any other ordinance, rule or regulation, or other provision of law, whichever provisions are more restrictive or impose higher protective standards for human health or the environment shall be considered to take precedence.

12.2 PRIOR RULES AND REGULATIONS

All prior rules and parts of rules and amendments to rules in conflict with this rule are hereby repealed.

12.3 CERTIFICATION OF RULES

I**,** _____**,** Secretary of the Coon Creek Watershed District Board of Managers, certify that the attached is a true and correct copy of the rules of the Coon Creek Watershed District having been properly adopted by the Board of Managers of the Coon Creek Watershed District.

Dated: _____, 202~~6~~2

_____

Secretary of the Coon Creek Watershed District

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APPENDIX A: DEFINITIONS

Term	Definition
Additional Waters	Waterbodies identified by the Anoka Conservation District that may benefit from perennially vegetated riparian buffers as a requirement under M.S. 103F.48 Subd. 4.
Adjacent	Joined by a continuous surface connection with obvious down-slope direction of flow, or within the 100-year floodplain of the waterbody in question.
Applicant	A property owner who has filed an application for a permit.
Atlas 14	The National Oceanic and Atmospheric Administration (NOAA) Atlas 14, Volume 8. A tool, published in 2013, that revises precipitation frequency estimates.
Best Management Practice (BMP)	Structural device, measure, facility, or activity that helps to achieve stormwater management control objectives at a designated site. Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.
Board	The Board of Managers of the Coon Creek Watershed District.
Buffer	A vegetated area bordering a lake, watercourse, or wetland that exists or is established to protect a waterbody. Alteration of this vegetated area is strictly limited. It consists of perennial rooted vegetation and protects the water resources of the state from runoff pollution; stabilizes soils, shores, and banks; and protects or provides riparian corridors.
~~**Building**~~	~~Any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal, or property.~~
Channel	A natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.
Control Measure	A practice or combination of practices to control erosion and attendant pollution.
~~**Conveyance System**~~	~~Open channel, pipe, or tile that is not part of a public drainage system.~~
Dedication	The deliberate appropriation of property by its owner for general public use.
District	The Coon Creek Watershed District.
Drainage Sensitive uses	Those land uses dependent upon the subsurface lateral effect of drainage ditches.
Drinking Water Supply Management Area (DWSMA)	Areas containing a wellhead protection area but outlined by clear boundaries, like roads or property lines. The DWSMA is managed in a wellhead protection plan, usually by a city.

Term	Definition
Emergency Response Area (ERA)	Areas surrounding public water supply wells where water has a one-year travel time to the well. ERAs are used to prioritize and manage potential contamination sources in the DWSMA.
Erosion and Sediment Control Plan	A plan that is designed to minimize the accelerated erosion and sediment runoff at a site during construction activities.
Extreme Fluctuations	Changes in the volume, elevation or timing of the discharge or storage of water that can result in adverse impact to the biogeochemical character of the receiving resource.
Floodplain	The elevation of water resulting from the critical duration flood event, as mapped by the Coon Creek Watershed District district-wide model and as the Coon Creek Watershed District may refine on the basis of site-specific data.
~~**Flow Velocities**~~	~~A condition where the rate of volume of water flowing exceeds the design capability of the conveyance system.~~
Fully Reconstructed Impervious Surface	An area where impervious surface is removed down to the underlying native soil, and the underlying native soil (as distinguished from roadway subbase material) is disturbed. The following are among those actions that do not constitute impervious surface reconstruction: structure renovation; impervious surface mill, reclamation and overlay; paving of an existing gravel road that will remain rural-section road; hard surface removal and replacement associated with an isolated maintenance activity (as opposed to broader-scale replacement) such as repair of a catch basin or pipe section or replacement at the same hydraulic capacity; and pedestrian ramp installation.
~~**Function**~~	~~The biogeochemical processes that sustain the wetland at the site and landscape levels. Specifically, the geomorphic setting, water source and hydrodynamics that contribute to sustaining wetlands.~~
~~**Growing Season**~~	~~The part of the year during which rainfall and temperature allow plants to grow. This can be determined by observable indicators on site such as soil temperatures of 41°F at 12 inches below the soil surface or aboveground growth development of vascular plants.~~
High Ecological Value Water	Waters identified by the Minnesota County Biological Survey as High Ecological Value Waters.
~~**Hydric Soil**~~	~~Soils that are saturated, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.~~
Hydrologic Soil Group (HSG)	A Natural Resource Conservation Service classification system in which soils are categorized into four runoff potential groups. The groups range from A soils, with high permeability and little runoff production, to D soils, which have low permeability rates and produce much more runoff.
Illicit Connections	Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or, Any drain or conveyance connected from a commercial or

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Term	Definition
	industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.
Illicit Discharge	Any direct or indirect non-storm water discharge to the storm drain system, except as exempted. Illicit discharges may include discharges from illicit connections with measurable flow during dry weather containing pollutants or pathogens.
Impaired Water	A waterbody that fails to meet one or more water quality standards, which protect waterbodies by defining how much of a pollutant can be in the water before it is no longer drinkable, fishable, swimmable, or useable in other designated ways (beneficial uses).
Impervious Surface	A compacted surface, or a surface covered with material that increases the depth of runoff compared to natural soils and land cover. Including but not limited to roads, driveways, parking areas, sidewalks and trails, patios, sport courts, swimming pools, building roofs, covered decks, and other structures.
~~**Improvement or**~~ **Ditch Improvement**	Any activity which deepens straightens or increases the "as constructed" capacity of a ditch. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, and substantial removal of vegetation.
Infiltration	The process of percolating stormwater into the subsoil.
Infiltration Practice	Any structure or device designed to infiltrate retained water to the subsurface. These practices may be above grade or below grade.
Inundation Period	The period of time ~~from the high water level within the wetland from additional stormwater discharged during a storm event to the existing normal water level.~~that the storm water temporarily stored in a wetland exceeds the normal water elevation of the wetland.
Land Disturbing Activity	Any activity which changes the volume or peak flow discharge rate of rainfall runoff from the land surface or has the potential to cause detrimental offsite impacts from erosion and sedimentation. This may be due to wind or water erosive forces. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity which bares soil or rock or involves the maintenance, repair, improvement, diversion or piping of any natural or man-made watercourse. In-kind replacement or repair of surfaces that do not expose the underlying soils is not considered land disturbance provided rates and volumes of discharge are unchanged. The term does not include normal farming practices as part of an ongoing farming operation.
Landlocked Basin	A basin lacking an outlet at an elevation at or below the water level produced by the 24 hour, 100-year storm event.
Landowner	The legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.
Maintenance Agreements	A legally recorded document that acts as a property deed restriction, and which provides for long-term maintenance of stormwater management practices.
Major Watercourse	Any watercourse with a contributing drainage area of 200 acres or more.
Managers	The Board of Managers of the Coon Creek Watershed District.

Term	Definition
Maximum Extent Practicable (MEP)	Within the limits of available technology and the practical and technical limits of a site and project, an applicant has reduced discharge of pollutants from stormwater to the maximum extent practicable (MEP) when the Board finds that he/she has made a good faith effort in meeting the following requirements: 1. The proposed plan is capable of being done from an engineering point of view. 2. The proposed plan is in accordance with accepted engineering standards and practices. 3. The proposed plan is consistent with reasonable requirements of the public health safety and welfare. 4. The proposed plan is environmentally preferred based on a review of social, economic, and environmental impacts, and 5. It would create no unusual problems.
MSE 3	A specific precipitation distribution developed by the United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), using precipitation data from Atlas 14.
Municipality	City or township wholly or partly within the watershed.
Nonpoint Source Pollution	Pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include, but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal, and urban runoff sources.
One Year Event	A storm event that has a 99% chance of occurring in any given year.
Ordinary High Water Level	The highest water level elevation that has been maintained for a sufficiently long period of time to leave evidence upon the landscape. The OHW is commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. If an OHW has been established for a waterbody by the Minnesota Department of Natural Resources, it will constitute the OHW under this definition.
Outstanding Ecological Value Water	Waters identified by the Minnesota County Biological Survey as Outstanding Ecological Value Waters.
Person	Any individual, firm, corporation, partnership, franchisee, association, or governmental entity.
Pollutant	Anything which causes or contributes to pollution including nonpoint source pollution and discharges from illicit connections. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, rules, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.
Public Waters	Waters of the state as defined in Minnesota statutes, section 103G.005, subdivision 15.
Pre-development Condition	The average conditions of a site over the 20 years prior to the time that the plans for development are approved by the Coon Creek Watershed District.

Term	Definition
Public Linear Project	A project involving a roadway, sidewalk, trail or utility not part of an industrial, commercial, institutional or residential development.
Recharge	The replenishment of underground water reserves.
~~**Redevelopment**~~	~~The rebuilding, repair, or alteration of a land surface for which over 50% of the parcel involved is disturbed by a land-disturbing activity.~~
Relevant Reach	That portion of the stream course and floodplain that would experience an increase in stage as a result of floodplain fill.
Repair or Ditch Repair	Any activity which returns a ditch or conveyance system to its "as constructed" elevation or slope. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, or substantial removal of vegetation.
Seasonally Saturated Soils	The highest ~~known~~ seasonal elevation ~~of saturated~~in the soil~~s~~ in a reduced chemical state because of voids filled with water causing anaerobic conditions. Seasonally saturated soil is ~~as indicated~~ evidenced by redoximorphic features within the soil profile or other information determined by scientifically established methods or empirical field measurements.
Sediment	Solid matter carried by water, sewage, or other liquids.
Shall	Is mandatory and not permissive.
Significant Material Change	Changes to grading, drainage, erosion control or other plans reviewed by the Watershed District that exhibit an identifiable or measurable change or difference from prior reviewed or submitted plans. The material change is significant if it results or can result in an adverse impact to property or resources not previously identified.
Site	A parcel or contiguous parcels of record on which activity subject to these rules is proposed. For linear projects, site means the area defined by the project's construction limits.
Stop Work Order	An order issued which requires that all construction activity on a site be stopped.
Stormwater	Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation and resulting from such precipitation.
Stormwater Management	The use of structural or non-structural practices that are designed to reduce storm water runoff pollutant loads, discharge volumes, and/or peak flow discharge rates.
Stormwater Pollution Prevention Plan (SWPPP)	A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.
Stormwater Runoff	Flow on the surface of the ground, resulting from precipitation.
Stormwater Management Practice	Measures, either structural or nonstructural, that are determined to be the most effective, practical means of preventing or reducing point source or nonpoint source pollution inputs to stormwater runoff and water bodies.

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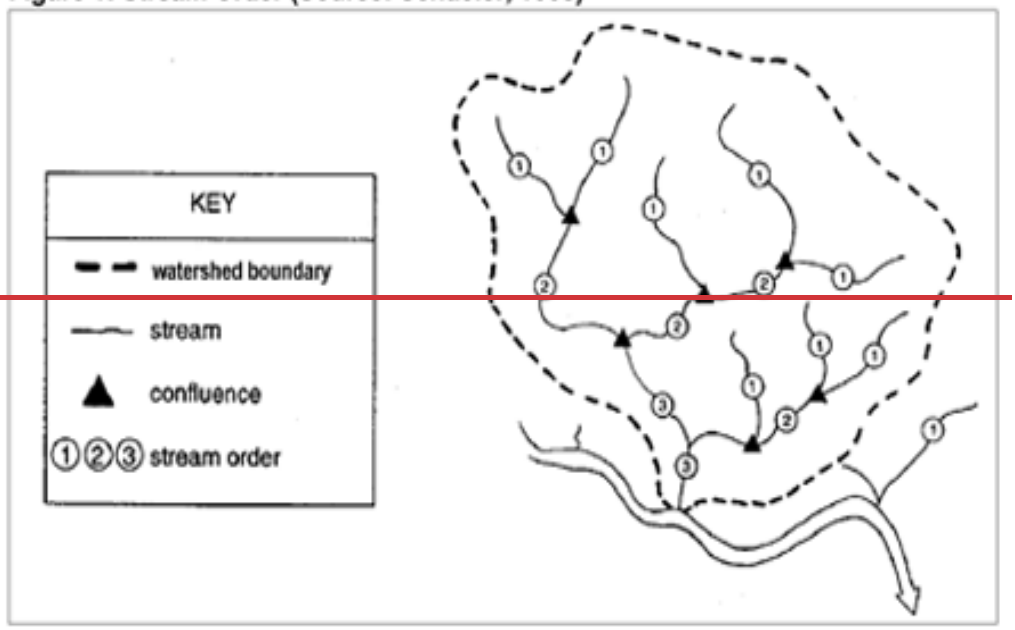
Term	Definition
Streams	Perennial and intermittent watercourses identified through site inspection and US Geological Survey (USGS) maps. Perennial streams are those which are depicted on a USGS map with a solid blue line. Intermittent streams are those which are depicted on a USGS map with a dotted blue line.
~~Stream Order~~	~~A classification system for streams based on stream hierarchy. The smaller the stream, the lower its numerical classification. For example, a first-order stream does not have tributaries and normally originates from springs and/or seeps. The approach consists of systematically ordering the branches and tributary streams. The extent of branching is an indication of the size and extent of the drainage network of the watershed. It influences the timing of peaks at a given point in the watershed as well as water quality.~~ ~~Figure 1: Stream Order (Source: Schueler, 1995)~~ 
Structure	Anything manufactured, constructed or erected which is normally attached to or positioned on the land, including portable structures, earthen structures, roads, parking lots and paved storage areas.
Total Maximum Daily Load (TMDL)	A Total Maximum Daily Load, or TMDL, is a regulation designed to improve water quality by controlling the amount of a pollutant entering a water body.
Undue hardship	The owner cannot make reasonable use of their property.
Water Quality Volume (WQv)	The storage needed to capture and treat 90% of the average annual stormwater runoff volume. Numerically (WQv) will vary as a function of long-term rainfall statistical data.
Waterbasin	An enclosed natural depression with definable banks capable of containing water.
Waterbody	A waterbasin, watercourse, or wetland as defined in these rules.

Term	Definition
Watercourse	A channel with definable beds and banks, either natural or man-made, which is capable of conducting surface water runoff from adjacent land.
Watershed	An area of common drainage.
Welfare	An act or thing that tends to improve, benefit, or contribute to the safety or well-being of the general public, or benefit the inhabitants of the watershed district.
Wellhead Protection Areas	Areas surrounding public water supply wells that contribute groundwater to the well. In these areas, contamination on the land surface or in water can affect the drinking water supply.
Wetland Functions	The biogeochemical processes that sustain the wetland at the site and landscape levels.
Wetland	An area identified as wetland under Minnesota Statutes section 103G.005, subdivision 19.

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APPENDIX B: INFILTATION RATES

ALLOWABLE INFILTRATION RATES BY SOIL SERIES

Soil Series	Soil Texture	Hydrologic Soil Group	Infiltration Rate (in/hr)
*Alluvial	Loamy fine sand	D	<0.2
*Anoka	Loamy fine sand	A	0.8 / 1.63
*Becker	Very fine sandy loam	B	0.3 / 0.6
*Blomford	Loamy fine sand	D/B	<0.2 / 0.6
*Braham	Loamy fine sand	B	0.3 / 0.6
*Cathro	Muck (Sapric)	D/A	<0.2 / 1.63
*Dickman	Sandy loam	B	0.3 / 0.6
Duelm	Loamy coarse sand	A	0.8 / 1.63
*Hayden	Fine sandy loam	B	0.3 / 0.6
Hubbard	Coarse sand	A	0.8 / 1.63
Isan	Sandy loam	D/B	<0.2 / 0.6
Isanti	Fine sandy loam	D/B	<0.2 / 0.6
*Kratka	Loamy fine sand	D/B	<0.2 / 0.6
Lino	Loamy fine sand	A	0.8 / 1.63
Markey	Muck (Sapric)	D/A	<0.2 / 1.63
Marsh		D/A	<0.2 / 1.63
*Meehan	Sand	A	0.8 / 1.63
Millerville	Muck (Hemic)	D/A	<0.2 / 1.63
Nymore	Loamy sand	A	1.63
Rifle	Muck (Hemic)	D/A	<0.2 / 1.63
*Rondeau	Muck (Sapric)	D/A	<0.2 / 1.63
Sartell	Fine sand	A	0.8 / 1.63
Seelyeville	Muck (Sapric)	D/A	<0.2 / 1.63
Soderville	Fine sand	A	0.8 / 1.63
Zimmerman	Fine sand	A	0.8 / 1.63

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APPENDIX C: CONVERSION FACTORS

TP REMOVAL FACTORS FOR PROPERLY DESIGNED STORMWATER MANAGEMENT PRACTICES

Stormwater Management ~~inf~~	Design Type	TP Removal Factor [1]
Infiltration [2]	Infiltration Feature	1.00
Water Reuse [2]	Irrigation	1.00
Biofiltration	Underdrain	0.65
Filtration	Sand or Rock Filter	0.50
Stormwater Wetlands	Shallow Wetland Pond/Wetland	0.40 0.55
Stormwater Ponds [3]	Wet Pond Multiple Pond	0.50 0.60

Adapted from Table 7.4 from the Minnesota Stormwater Manual, MPCA

[1] Refer to the Minnesota Stormwater Manual for additional information on BMP design and performance. Removal factors shown are for average annual TP removal efficiencies ~~for~~ intended to be used solely for comparing the performance equivalence of various BMPs.

[2] These BMPs reduce volume.

[3] Stormwater ponds must be designed in accordance with the Minnesota Stormwater Manual. To ensure removal of 80 percent TSS, wet ponds must be at least design-level 2 according to the Minnesota Stormwater Manual. Level 2 ponds must meet the following criteria:

3. Dead (or permanent) storage of at least 1800 cubic feet per acre of drainage area.
4. Permanent storage volume must reach a depth of at least 3 feet and must have no depth greater than 10 feet.
5. Discharge rate of the water quality volume does not exceed 5.66 cubic feet per second per acre of surface area of the pond.
6. Flow path length to pond width ratio is 1:1 to 3:1. A ratio of 3:1 is recommended.

Volume Calculations:

The water quality volume is calculated as follows:

- If the project will disturb greater than 50% ~~or greater~~ of the existing site:
  - Required treatment volume (cubic feet) = Entire site impervious surface (square feet) × 1.1 (in) ÷ TP Removal Factor ÷ 12 (in/ft)

- If the project will disturb less than 50% of the existing site:
  - Required treatment volume (cubic feet) = New and fully reconstructed impervious surface (square feet) × 1.1 (in) ÷ TP Removal Factor ÷ 12 (in/ft)

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APPENDIX D: WETLAND CLASSIFICATIONS

WETLAND SUSCEPTIBILITY BY TYPE

Highly Susceptible[1]	Moderately Susceptible	Slightly Susceptible	Least Susceptible
Sedge Meadows	Shrub-Carrs	Floodplain Forests	Sand/Gravel Pit
Open Bogs	Alder Thickets	Fresh (Wet) Meadows[2]	Cultivated Hydric Soil
Coniferous Bogs	Fresh (Wet) Meadows	Shallow Marshes[3]	Dredged/Fill Material Disposal Sites
Calcareous Fens	Shallow Marshes	Deep Marshes[3]	
Low Prairies	Deep Marshes		
Coniferous Swamps			
Lowland Hardwood Swamps			
Seasonally Flooded Basins			

1. All Scientific and Natural Areas and pristine wetlands should be considered in this category regardless of wetland type.
2. Dominated by *Phalaris arundinacea* (Reed Canary Grass).
3. Dominated by *Phalaris arundinacea* (Reed Canary Grass), *Typha sp.* (Cattail), *Phragmites australis* (Giant Reed), or *Lythrum salicaria* (Purple Loosestrife).

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APPENDIX E: NUMBER OF SOIL BORINGS OR PITS

Surface Area of Stormwater Management Practice (sqft)	# of Borings or Pits
<1,000	1
1,000 to 5,000	2
5,000 to 10,000	3
>10,000	4[1]

[1]An additional soil boring or pit should be completed for each additional 2,500 sqft above 12,500 sqft

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